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ARIZONA STATE MEDICAL ASSOCIATION
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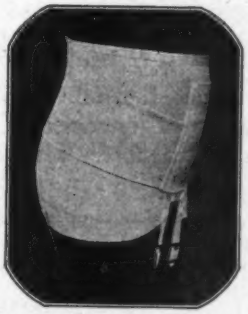

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PROBLEMS AND MANAGEMENT OF INTRACTABLE ASTHMA

GEORGE PINESS, M. D.
and
HYMAN MILLER, M. D.
Los Angeles, Calif.

(Read before the Seventeenth Annual Meeting of the Medical and Surgical Association of the Southwest, held at Phoenix, Arizona, Dec. 3-5, 1931.)

Intractable bronchial asthma may be defined as a persistent, obstinate, refractory type of bronchial asthma that is unyielding to modern methods of therapy. To be so classified, a case of bronchial asthma must have had a complete study in the broadest sense of the word "complete". Such a study having been made, the case may be classified as intractable either because the complexity of factors involved makes successful specific treatment impossible in the hands of the general practitioner or even the allergist, or, the etiology being undeterminable, there is failure of nonspecific treatment. Ordinarily this group is thought to constitute 20 per cent of all asthmatics, but in the hands of the competent allergist this may be reduced to about 10 per cent by a study and management which we are to discuss in detail below.

Before a final diagnosis of intractable asthma is made, one must not forget or discount the responsibility placed on the physician by such a diagnosis, for, immediately this is made, the prognosis becomes hopeless, not only as to relief, but as to cure, and not infrequently as to life. Moreover, the psychological effect on the patient is quite the same as in an individual who might be diagnosed as tuberculous, which diagnosis remains as a permanent stigma upon him. Should the diagnosis be in error and relief or cure be accomplished by some other physician, or spontaneous cure arise through some unknown cause, medicine in general, and allergy in particular, would be placed in a position of disrepute. Therefore, it has been the policy in our office never to consider a case intractable until a most comprehensive and careful regime of study and observation has been carried out. Of prime importance is our attitude toward the patient when first coming under our care. Regardless of the duration or severity of symptoms, regardless of the fact that he has been under the care of the most competent practitioner, and despite the hopelessness of the prognoses which have been given him, he is advised that he is to be considered by us as an entirely new case to be studied as a completely new problem. However, on the completion of the study, he is advised that we should be and will be glad to compare the results of our studies with those of others. In this manner, not infrequently, a patient who may have been classified as intractable from the previous studies of others, may be removed from this classification, thus explaining the reduction of percentages above mentioned.

Since we are in accord with the opinions of most workers in the field, that bronchial asthma is due to the multiplicity of factors that go to make up the allergic constitution, it is well that, in studying these individuals, every possible source of information be minutely and persistently searched out. Only in this way can we arrive at the correct diagnosis, the true etiology, the principles on which treatment by specific and symptomatic measures is to be carried out, and the proper prognosis.

Of first importance is a searching history beginning with the patient's heredity. A positive hereditary history of some type of allergy is of some aid but not always necessary for diagnosis, as but 47 per cent of our patients give such a history. A positive hereditary history has not been found to affect the prognosis as to severity or duration, but does usually have some bearing on an early onset of the disease and the presence of protein sensitivity.

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In obtaining a personal history, the following are some of the points which must be kept in mind. We have found that the earlier the age of onset, the more likely is the individual to be sensitive to proteins, and, conversely, as age increases so does such sensitivity decrease. As to prognosis, it cannot be too strongly emphasized that the age of onset cannot be used as a criterion, because, despite popular belief, prolonged, severe, intractable asthma may begin in early childhood as well as in later life.

A history of some other allergic disease preceding bronchial asthma suggests specific sensitivity. A history of acute infectious diseases and their relation to the present illness, especially with regard to the onset of asthma, and their influence on its course, is extremely significant, particularly since acute or chronic respiratory infections are often associated with the more chronic and persistent types of asthma.

Information with regard to the occupation of the patient is frequently a factor that makes possible the change from the diagnosis of intractable to controllable bronchial asthma. Occupations most commonly found to be important in causing persistence of symptoms are: baking, beauty-parlor work, dairying, hostling, pharmacy, and not infrequently hotel work and house-keeping.

The seasonal variation of symptoms is not important in the type of asthma under discussion except that a history of seasonal variation at the onset would give a clue as to the original etiology. With the onset of perennial symptoms, however, as is characteristic in this group, this would not be of significance either as to cure or prognosis.

The effect of environment and climate on the course of the disease is more important than seasonal variation, because of the many causes that might be conducive to the continuation of symptoms. These may result from constant contact with some offending substance, such as feathers, face powders, certain rugs, furniture, and so forth. Conversely, change of environment or climate, although giving temporary relief, should not be overemphasized in considering the prognosis. Too often is this made a necessity for the constant peregrination of the chronic asthmatic, which so often results in his economic, social, and physical bankruptcy. One cannot too strongly decry the tendency on the part of many physicians who are only too ready to advise such changes. This, we feel, is often an admission of defeat.

A history of food dislikes and idiosyncrasies, often dating back to childhood, may give a lead as to some protein sensitization. Of less value, because of the prevalence of so much food faddism, is the history of the definite relationship of some food or foods to the onset of attacks. It must be remembered in this connection that a starvation or semi-starvation diet may lead to the relief of symptoms in the most severe and persistent asthma. One must not be misled by such phenomena into the diagnosis of a definite causal relationship between food and symptoms or be carried away by the apparent improvement under the widely touted elimination diets. Improvement under such regimes constitutes a diagnostic pitfall which often results in permanent harm to the patient and vain regrets on the part of the physician.

A minute study of the character of the symptoms is an absolute essential to proper diagnosis, care, and prognosis, in each patient. Dyspnea being the fundamental symptom of bronchial asthma, we must inquire into its every phase. We must inquire into the factors which brought on the first and subsequent attacks, into its vagaries, variations, and violence, its periodicity, its persistence, and the means used for relief.

Cough is the second most common symptom, and here all that was said with regard to dyspnea also applies, in addition to which one must determine the character and amount of sputum and whether productive or non-productive cough persists between attacks of dyspnea. Other symptoms, such as those related to the gastro-intestinal tract and other systems, should not be neglected, for we must remember that the asthmatic suffers from a constitutional disease which may affect the entire body metabolism. Last but not least, is the inquiry into the psyche of the patient. His economic, social, and even his moral burden, must be weighed and considered. More could be said with regard to the inquisitiveness which must be exercised in order to elicit those small grains of information which often mark the difference in the diagnosis between intractable and controllable asthma, but sufficient has been said to indicate what was meant by "a complete and searching history."

We come now to the psysical examination on which is dependent the identification of the characteristic complications and sequelae which make the members of the group under discussion intractable to treatment. It is not our object at this time to enter into a discussion on differential diagnosis, but we do feel that the following conditions, which simulate bronchial asthma and run a course similar to that of the type under discussion, should be ruled out. They are chronic bronchitis with associated bronchiectasis, pulmonary abscess with bronchial fistula, chronic fibroid pthisis, chronic heart disease,

pulmonary sclerosis, pulmonary and mediastinal new growths, enlarged tracheobronchial glands, pulmonary tuberculosis, foreign bodies, Vincent's infection, and pulmonary mycosis.

The common complications and sequelae usually brought out by physical examination are bronchitis, bronchiectasis and emphysema, any of which will influence the management and treatment of the individual and, obviously, the prognosis, as will be discussed more fully later.

Clinical and x-ray studies of nose and accessory sinuses should be done routinely, the object being to determine sources of focal infection, not because we believe they are necessarily the basis of the symptomatology, but merely because of the general constitutional good that may be accomplished by their eradication. X-ray studies of the chest are particularly important in chronic intractable asthma, again because of the sequelae and complications that may manifest themselves. In ordinary bronchial asthma, very little, if any, pathology is evidenced in the plate; merely an increase in size of chest, pulmonary emphysema, bronchial thickening, and flattening of the diaphragm. The most important role of the x-ray is to aid in bringing to our attention such conditions as foreign bodies, pulmonary tuberculosis, bronchiectasis, tumors, and so forth.

Laboratory studies of the blood, urine, and sputum, in uncomplicated cases, reveal very little valuable information. The urine usually shows no characteristic changes. The blood may reveal an anemia which may be sufficiently great to warrant treatment. An eosinophilia may be an additional point in the confirmation of the allergic basis of the disease. The sputum examination rules out tuberculosis, Vincent's and fungus infection.

SKIN TESTS

In a previous statement we took the attitude that the patient should be studied from an unbiased viewpoint; therefore, we contend that he should be tested with every available protein. This is not in accord with the opinion of many allergists and particularly of Brown. We contend that the patient, regardless of his intelligence, cannot give the allergist the information required to determine what he should be tested with, and believe that, when patients are tested with every protein available, there will be fewer cases to be classified as nonsensitive and so brought into the intractable classification. The method of testing is a matter for the choice of the individual practitioner. Surely the best method is that one in which the operator is most efficient, although we advise that every patient be studied by both intradermal and scratch methods, using the latter first to avoid untoward and dangerous reactions. Regardless of the method of testing used, a far more important consideration is that the activity and reliability of the proteins be beyond suspicion. Finally, the individual interpreting the reaction must know the difference between the true, pseudo and negative, reactions. After all testing has been done and one is still of the opinion that the results do not fulfill the expectations, then the patient should be retested until one is satisfied that nothing more is to be learned by persisting further. Positive reactions are valuable only when they corroborate the clinical history, as to time, season, habitat, environment, and so forth. We do not take the attitude that a diagnosis of intractable, as opposed to controllable, asthma should be made on the basis of a difference in sensitivity, for intractable asthma may be present in the individual who is demonstrably sensitive. Too often in the past there has been the tendency to classify the non-sensitive individual as suffering from bacterial asthma, which has been taken to be synonymous with intractable asthma. Bacterial asthma, so far as scientific proof is concerned, is still the figment of the imagination of those who decry the necessity for complete and repeated protein study, of those who have, through empiric methods, found a certain panacea in snake venom, peptone, vaccine, and so forth. This is brought out mainly to emphasize the fact that a large proportion of the group of intractables is removed from this classification by the results of a complete and conscientious study.

Having, by the methods outlined above, limited the number of intractable asthmatics to an irreducible minimum, let us further examine the nature of this group. We feel that it can be properly divided into two types: the first, the intermittent; and the second, the persistent. The clinical characteristics common to both are: onset at any age, with both sexes equally represented, no relation to heredity, not dependent on the presence or absence of protein sensitivity, usually perennial with or without seasonal exacerbations, and with no relation to environment.

The first group is characterized by intermittency of attacks, with complete absence of symptoms and physical signs during the free period, except for the characteristic picture presented by the mucosa of nose and throat, and the absence of complications and sequelae characteristic of the second group.

The second group is characterized by persistent wheeze, cough, and dyspnea, with acute exacerbations, usually nocturnal, brought on by many stimuli,-psychic, physical, and protein. This group is never free of

symptoms, many of which are due to sequelae such as emphysema, chronic bronchitis, bronchiectasis, and so forth. On the other hand, the asthma may be a symptom of such preceding conditions as fibroid pthisis, unresolved pneumonia, mediastinal growths, and so forth.

With these facts in mind, we can turn with some degree of comfort to a rational method of treatment. This, perforce, must be palliative and symptomatic in character, having as its objects the reduction of disability, the prevention of further progression of complications, the warding off of a fatal outcome, and the giving of a certain amount of comfort to the patient.

GENERAL MANAGEMENT

What is to be said under this head follows rationally from what has been said with regard to the necessity for a thorough and painstaking history and examination, and is dependent entirely upon such an examination. Taking up first the hygienic care of the patient, this must be considered from both the psychological and physiological standpoints. From the psychological standpoint, every effort must be made to furnish that equanimity without which all further treatment may be of no avail. Often the factors controlling the psyche of the individual are beyond the control of the psysician. However, much can be done with proper advice regarding social relationships and economic problems. More directly under the control of the physician is the physiological well-being of the patient. It is proper, when so indicated, to put the patient to bed for prolonged periods, preferably in a hospital, which accomplishes the double purpose of absolute control of the physical well-being of the patient and removal from psychological environmental factors which may continue to aggravate and produce symptoms. After a prolonged period of bed rest, proper exercise should be instituted and encouragement given to the patient to attempt activities which he had heretofore thought himself unable to accomplish. The dietary must be considered and proper emphasis placed upon it, always keeping in mind the tendency at the present day to overemphasize this phase of the care of the patient. A properly balanced diet, with avoidance of those foods which the patient is certain cause symptoms and which have been found, by means of skin tests, to react positively, is a prime requisite in the dietetics of this disease. There should be a prevention of loss of weight, except in the obese, in whom it is sometimes advisable to produce a reduction in weight. Certain digestive aids, such as hydrochloric acid and digestive ferments, are often found to be of benefit, such benefit being demonstrable only after trial. Advice with regard to the size of meals is important, as it is a characteristic of these patients to have considerable trouble after heavy meals, particularly if taken toward evening. Nutrition can be maintained by giving frequent small meals. Medication should be kept as simple as possible, chief reliance for prolonged medication being placed on the iodides, either by intravenous, oral, or intrabronchial, administration. Ephedrine and adrenalin may be exhibited as needed for acute exacerbations, always keeping in mind that in chronic bronchial asthma we must not permit the patient to become adrenalin fast, for, in emergency, we must rely on this drug for relief. In order to control apprehension, a common symptom after a prolonged bout of asthma, sedatives such as the bromides may be used. On no account should a narcotic or habit-forming drug be used, a principle which holds for all chronic diseases. When indicated, tonics may be given and are often of help in improving the appetites of many of these patients.

In those patients in whom there are complications such as tuberculosis, bronchiectasis and so forth, the commonly accepted modes of treatment for these conditions must supplement all the above, and not infrequently, especially in bronchiectasis, does the patient obtain considerable relief from such treatment.

Even in the intractable asthmatics, the demonstration of specific protein sensitivity necessitates specific treatment. For such environmental factors as pollens, hairs, feathers, and so forth, which cannot be avoided, antigens should be prepared and administered in the usual manner, which need not be entered into here. The environment and occupation should be controlled on the basis of the skin tests, as should also the dietary. In the non-sensitive type, vaccines, either autogenous or stock, should be tried out. We have found but little difference in the efficacy between the autogenous and the stock vaccines.

There is one phase of the treatment of the intractable asthmatic which must be given especial attention and that is the acute, prolonged, and ungovernable attack of asthma. These attacks are of the type which not infrequently precede a fatal outcome. In the role of allergist, we have had occasion to see a considerable number of patients in such paroxysms and what we have to say with regard to their care is the result of our experience with them. Before entering into a discussion of how we care for these patients, it must be brought out that we see them late in the attack, after adrenalin has been used to the point where

it is no longer effective, after cyanosis of marked degree has set in and has been relieved by the administration of oxygen, when repeated use of any one of a number of narcotics (such as morphine, codeine, pantopon) has been made, all without avail. The patient is usually semi-conscious, cyanotic, dessicated, and suffering from agonizing, exhausting dyspnea. To handle these patients without hospitalization is inviting disaster. It is our practice to place them in a hospital, preferably in a room specially prepared to eliminate all environmental factors which our experience has shown to be possible causative agents in precipitating or prolonging an attack. Fluids are forced per rectum, intravenously, or by hypodermoclysis. Sedatives such as chloral, bromides, or chloretone, by rectum, are often effective in quieting the nervous irritability of patients. Instead of oxygen, carbogen is used to stimulate deeper respiration, thus often opening up bronchi occluded by mucus plugs. Removal of such plugs can also be facilitated by the intravenous administration of sodium iodide. Caffeine hypodermically has proved of great value in supporting the circulatory system of such patients and at times has proved a succesful substitute for adrenalin.

HEADACHES DUE TO SPECIFIC HYPERSENSITIVENESS.

History Taking and Etiology.

RAY M. BALYEAT, M.A., M.D., F.A.C.P.,
and
HERBERT J. RINKEL, M.D.,
Oklahoma City, Okla.

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I. HISTORY TAKING.

The occurrence of allergy in the individual is of great aid in establishing the syndrome of headache due to specific sensitization. The diagnosis of this type of headache is made after three studies have been completed; namely, the history, physical examination, and the laboratory tests. Of these studies we shall discuss only history taking in this paper.

After ascertaining the patient's symptoms and their duration, one should inquire as to the occurrence of signs that indicate other allergy—for instance, attacks of sneezing, alternating nasal congestion, and so forth. The age of onset is first ascertained. The likelihood of specific sensitization as a cause of headache is greatest in those that begin in the first decade of life. The management of a case depends to a great extent on the frequency and duration of the headache, as does the interval of occurrence. The presence of nasal congestion should be elicited at this time.

Prodromal Stage. If this stage is present, the patient may feel heavy, dull, apathetic, indifferent, and irritable, or may be hyperactive, both mentally and physically. Some patients have bulimia during this stage and others note a profound or druggy sleep preceding the headache.

Aura. Is there an aural stage? Elicit the presence of scotomata, colored rings, luminous zig-zags, hemianopsia, blurring of vision, and photophobia, being sure to determine if the visual disturbances are ipsolateral or contralateral to the hemicrania. Are there auditory or olfactory changes? Does the patient complain of paresthesia? The majority have symptoms in the hands, feet, and face, in the order named. What motor symptoms are there? Are there vasomotor disturbances, such as flushing or pallor? Is there vertigo?

The Attack. What are its characteristics? Does the headache occur along with the onset of aura or follow it? Is it manifested without any premonitory or aural symptoms? Where is it located—temporal, frontal, occipital, and so forth? Is it hemicrania, alternating hemicrania, or unilateral headache becoming generalized, bilateral becoming hemicrania, or bilateral throughout? The occurence of nausea and emesis, both with recent attacks and attacks early in life, should be considered. In children one is interested in the occurrence of pyrexia.

Postmigrainous Phase. Is there a postmigrainous stage, and, if so, what symptoms are manifest? The usual features are polyuria, rhinorrhea, and sleepiness, along with exhaustion and depression. In every case there should be a routine inventory of systems and a detailed analysis of the course of the disease and the variation of symptoms in different attacks. We aim to establish the occurrence of allergy in the individual. This is materially aided by analysis of the family tree, a study of the patient's past history, and ascertaining the presence of symptoms that indicate specific sensitization in the individual.

The Family History. We have shown in a previous communication[1] that allergic diseases existed in the antecedents of 82.1 per cent of the patients suffering from headaches due to specific sensitization. Therefore, we not only elicit the occurrence of hay-fever, asthma, hives, eczema, and epileptiform seizures, in the antecedents, but familial headache as well.

Past History. The past history of the individual is next studied, in order to elicit manifestations that will aid in establishing

the diagnosis. Of these various phenomena we inquire as to the occurrence of food intolerance and eczema in infancy, and afebrile colds and bronchitis in childhood. Amelioration of these symptoms after pyrexia indicates their allergic nature and enhances their diagnostic importance.

Symptoms That Indicate Specific Sensitization: In every allergic individual there are certain manifestations which are indicative of this state. The most common symptom is that of itching; therefore, the occurrence of itching of the nose, itching of the roof of the mouth, itching of the back of the throat, itching of the eyes, and itching along the eustachian tubes, is elicited. Other manifestations that are of aid include paroxysms of sneezing attacks, of nasal congestion, rhinorrhea, excessive lacrimation, and a tendency to develop frequent colds. In addition to these symptoms, one deals, of course, with the obvious evidences of allergy, such as wheezing and cough in asthma, or the wheal formation of urticaria, and so forth.

Dietetic History. Our final step in the history taking is to obtain a careful dietetic history of the patient. We should elicit with great care the choice of food, not only during the entire year, but in early life, and any fads, fancies, or dietary regimes that the patient has followed.

Having completed the history and physical examinations, one is able to determine the need of additional study from the standpoint of nasal deformities, chronic infected tonsils, and so forth.

II. ETIOLOGY.

In migraine and other headaches due to specific sensitization, there is a predisposing background and an exciting factor. Foods, and foods alone, have been found to be the exciting factor in cases of migraine reported in this paper.

A. PREDISPOSING FACTORS

Heredity. Of the various predisposing factors in headaches due to specific sensitization, none is of more importance than that of heredity. We have shown in a previous publication that migraine is interchangeable in the linkage with asthma, hay-fever, urticaria, and other accepted allergic manifestations. In addition, we find that approximately 80 to 85 per cent of all of our cases suffer from these syndromes. In analyzing the family history of these patients, it has been found that migraine or some of the well established allergic diseases were present in approximately 82 per cent of the families. The ratio of a unilateral and bilateral history is approximately 7 to 1. In cases with a unilateral family history, the mother transmitted the tendency in ratio, to the father, of 2 to 1. The hereditary familial history appears to have a higher incidence in migraine than in asthma and hay-fever. Spain and Cooke[3] found a positive antecedent history in 58.4 per cent in a series of 462 cases of bronchial asthma and hay-fever. Rowe[4] found positive family histories in 56.4 per cent of his cases. We[5] have reported a positive family history of allergic diseases in 60.1 per cent of patients with asthma and hay-fever, 67.6 per cent in cases of urticaria[6], and 64.3 per cent in eczema[6]. The fact that headaches occur in 20 per cent of all patients presenting themselves for allergic study, that those who suffer from headaches have a family history of well accepted allergic diseases in approximately 82 per cent, and that they themselves suffer from these allergic diseases in approximately the same per cent, all indicate the probability of specific sensitization as the etiological factor.

The Relation of Epilepsy and Migraine. In many writings concerning migraine, reference is made relative to the association of epilepsy in the family. In reviewing the literature on migraine, we are impressed with the fact that many believe that epilepsy and migraine are closely related. Gowers[8] believed it. Hassin[9] states that it is interchangeable in the linkage with epilepsy and mental disorders. Church and Peterson[1] state, "Any neuropathic family is almost sure to present cases of migraine. It seems capable of transmission by transformation, alternating with hysteria, epilepsy, and insanity." E. Bates Block[2] states that "it occurs especially in nervous people or members of neurotic families." Timme[10] states, "It need not be assumed, however, as indicated by most textbooks, that the hereditary factor must be migraine itself. In the experience of the writer this is but one of a number of symptoms which merge into one another, are metamorphosed in passing from parent to offspring. . . This group of symptoms comprises epilepsy, glycosuria, giantism, carcinoma, asthma, urticaria, the arthritides, Raynaud's disease." In a recent work, Bray[11] states that, after a study of several hundred cases, he has been unable to establish the association of epilepsy with allergic conditions. He stresses the fact that migraine and epilepsy are relatively common, and that it is quite probable that the two should coexist in the same individual. We must agree with Bray. Many authors class the migrainous patient with the neurotic. This is true of a number of patients, but the great majority of migrainous individuals do not belong to the neurotic group. It is true that

most of them are people with sensitive mentalities and mercurial dispositions, but they are dynamic characters and are frequently leaders in their lines of endeavor.

In our series of cases, the ratio between female and male has been that of 2 to 1. Approximately 30 per cent manifest symptoms by the end of the first decade, another 30 per cent within the second decade, and approximately 25 per cent in the third decade. The remaining cases are scattered throughout the fourth and fifth decades and later years.

The incidence of migraine varies in different groups of patients. In our survey presented in March, 1931,[1] we found that physicians were afflicted in approximately 8 per cent, nurses in 12 per cent, unemployed male laborers in 3½ per cent, and women teachers in 10.4 per cent; also high school male students in 6.5 per cent and female high school students in 13.5 per cent. These figures have been obtained both by the study of patients and by a detailed questionnaire.

There is no definite evidence indicating that these headaches are influenced by climate. Occasionally a change will bring temporary relief. Occupation may be of importance in cases where dust is a factor or where there is a tendency for the patient to undergo physcial and mental fatigue. Again, attacks may be precipitated by occupations that require excessive use of the eyes.

In eighty consecutive basal metabolic tests, there were sixty-one patients whose rates would vary from minus 1 to minus 33, the average being minus 7.29. There were nineteen whose rates were from plus 1 to plus 22, with a general average of plus 2.2.

B. EXCITING CAUSES.

The proved exciting factors in migraine have been foods. The non-migrainous headaches may be precipitated by inhalants as well as by foods. One of us[11] has presented a number of cases showing the specific relation of foods to the onset of headaches. Vaughan[11] and Rowe[11] have also reported this specific relation. In proving sensitization to food one soon learns that in certain cases he is able to induce a headache every time that food is ingested. Headache may result from the taking of specific foods but does not occur each time the patient takes this particular food. Patients have attacks at 10 or 12 day intervals; sometimes they may go as long as six weeks before experiencing an attack. When the food to which they are sensitive has been removed from the diet, they are free of headaches; and when it is again placed in the diet, the attacks reappear. Occasionally a patient states that he may eat one or two foods separately, but if both of these foods are taken at the same time he will have difficuty.

In the non-migrainous headache, specific sensitivity may result in unilateral nasal congestion and thus produce hemicrania, which promptly ceases when the congestion is relieved. A non-migrainous hemicrania is often produced by food, as are bilateral headaches.

Any food may produce headache. It is a matter of experience, however, that wheat, egg, and milk—especially milk—potatoes, beef, pork, apple, onion, the legume group (namely, navy beans, lima beans, kidney beans, string beans, lentils, soy beans, peanuts), and some of the nuts and shell sea foods, are the common offenders. The amount of food that is necessary to precipitate a headache is indeed small. The difference in milk content of country and creamery butter is a common cause of symptoms.

Finally, let us state that the determination of the etiological factor is a matter of trial. We have found, as has Vaughan[11], that the laboratory tests, that is, scratch and intradermals, are the best means by which to outline care and to begin treatment.

Demonstration of the etiological factor by clinical testing is illustrated in the following cases.

CASE 1. Dr. R. J. H., age 35, was subject to attacks of migraine at irregular intervals. On testing there were no definite reactors. An analysis of the diet indicated that apple was a very probable cause. Clinical trial proved that both apple and onion would produce hemicrania with paresthesia, scotomata, and hemianopsia. As little as one-eighth cube of raw apple will initiate symptoms. There has been no recurrence except when apple or onion is used in the diet.

CASE 2. Mrs. B. W., age 48, school teacher, seen for a chronic form of headache, following previous attacks of migraine. There were a number of positive foods by the scratch and intradermal methods of testing. On clinical trial it was proved that egg, chicken meat, beef, white potatoes, and pear, will produce headache. When these foods were out she was entirely free of the headache, and each time one of these foods was used in the diet she wou'd have a headache.

CASE 3. Mrs. C. O. E., age 47, was seen because of migraine. Clinical testing with milk showed that headaches of two or three days' duration would occur each time that milk was used. By trial we learned that as little as one teaspoonful of milk would produce headache 72 hours after ingestion.

There is apparently a definite time interval, which varies in different patients, between the ingestion of the food and the onset of symptoms. In Case 3, this interval was 72 hours. In Case 1, the interval was 7 hours. This period is apparently the same for all foods that cause difficulty but it varies in individual patients.

In a subsequent paper which deals with pathology and symptomatology we shall discuss in detail the symptoms produced by in-

gestion of a food to which a patient is hypersensitive.

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GASTRO-INTESTINAL ALLERGY AND ITS SEQUELAE

V. G. PRESSON, M. D., and
R. A. WILSON, M. D.
Tucson, Arizona

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The whole field of allergy is so new compared to other phases of medicine that many of our ideas on the subject will remain theories for years to come. These theories cannot become definite facts until a sufficient length of time has elapsed for clinical and physiological evidence to prove the truth or falsity of our conceptions. Consideration of this subject should begin with as clear a conception as possible of what is meant by allergy. It is relatively a new term and, notwithstanding the great amount recently published on the subject, there may be some who do not understand clearly what is meant when we speak of allergy.

Von Pirquet in 1906 used the word to describe the difference between the reactions produced by the first inoculation with cowpox virus and the second; later, however, he modified his use of the word and defined it as an altered reaction capacity. He and almost all the other workers in this field use it to describe all forms of altered reactivity, without regard to mechanism involved, and to indicate any form of hypersensitiveness not falling under the strict definition of anaphylaxis. Used synonymously are the terms "phenomenon of hypersensitiveness," "idiosyncrasy," and "atopy."

The history of the development of the study and comparative understanding of allergy and its manifestations is so intimately related to the study of asthma, hay-fever, anaphylaxis, and so forth, that to separate them is difficult.

In 1906 and 1910, Rosenau and Anderson worked with the details of many of the fundamental features of anaphylaxis. It was not until 1910 that Mettzer observed the relation of anaphylaxis and bronchial asthma, and the clinical hypersensitiveness began to be recognized. From 1915 to 1917, Walker, Cooke and Vanderveer and Goodale made rapid strides in explaining many things heretofore poorly understood. Thus, we see the entire development of the conception of human allergy has taken place since about 1915. This fact alone justifies our statement at the beginning of this paper.

When we began to correlate human hypersensitiveness with disease conditions, hay-fever and asthma received all the attention at first; then, gradually, it began to be recognized as an etiological factor in other conditions. Though Osler described patients with purpura, urticaria and angio-neurotic edema who also had various visceral symptoms, in 1903 and 1904, and remarked that before long the "Anaphylactic Key" would unlock the mystery of them; and it seems that this prophecy has been fulfilled.

Since its universal recognition, allergy has taken within its fold and solved many problems heretofore poorly understood; but there are many things yet to be explained. In the enthusiasm of workers trying to solve difficult questions, their interest in a new field may carry them too far and cause an inclusion in that field of conditions which do not actually belong there. Some of the so-called physical allergies advocated by Duke and others, may yet prove to be entirely outside of the realm of hypersensitiveness. Endocrino'ogy, when more fully understood, may absorb much that we now include as allergy. As a matter of fact, as we delve further into this, we may at some future date determine that a disturbance in the physiology of the endocrine system

may be the "why and wherefore" of allergy. However, some of the gastro-intestinal symptoms produced by hypersensitiveness seem to be well enough understood and established to fall within this category with-not argument or fear of being displaced.

Perhaps no field in medicine is beset with so many difficulties in diagnoses as gastro-enterological conditions, and, in making studies and diagnoses on these cases, it is just as important to keep allergy in mind as it is in studying the respiratory system. The gastro-enterologist has but few methods of diagnosis as compared with men in other fields. History and symptomatology are the things upon which we must largely depend. Duke concisely expressed this fact: "Allergy is important in its relation to the gastro-intestinal tract, not only because it can produce serious gastro-intestinal disorder, but also because it can simulate both functional and organic disease due to other causes." Unless it is considered seriously and intelligently, many avoidable errors in diagnosis will be made. This is borne out in Rowe's study of 150 cases of gastro-intestinal allergy in whom forty-seven had had abdominal surgery, although no organic lesions were found in eighty of the 150 that were examined by x-ray. It may be stated that allergy, generally speaking, like syphillis, is the "mocking bird" in the field of medicine. Allergy in the gastro-intestinal tract will simulate somewhat many known diseases, but it will not fit into a pattern exactly and, hence, will give a lead to its true nature. Therefore, in studying these cases, when one does not fall into the well-known classification of a certain syndrome, errors will often be avoided if we keep allergy in mind and prove its presence or absence.

The bizarre nature of symptoms in the gastro-intestinal tract that will prove to be allergic and cured by the elimination of offending material, must be recognized. There is no set group of symptoms that mean allergy. To refer again to Rowe's study, there are tabulated twenty gastro-intestinal symptoms. The history of other manifestations of allergy in the patient or in his family should call our attention to the possibility of allergy in the gastro-intestinal tract.

The question will arise in the minds of many as to whether so-called gastro-intestinal allergy exists and produces symptoms. There is little doubt when we recall the pathology occurring as a result of idiosyncrasies in other parts of the body where the condition is more clearly understood and is demonstrated, such as the nose and skin. When we study the histology and physiology of the gastro-intestinal tract, we understand that we have an area of something over twenty feet in length which is just as capable of setting up disturbed mucous membrane, physiologically, as are those parts of the respiratory tract which are histologically similar; and it would occur to us that, with all this amount of tissue subject to allergic changes, the symptoms produced would likely be more severe, more intense, and more variable than in the relatively smaller area of the respiratory tract. When we realize that the comparatively insensitive skin reacts easily to allergic conditions, then we must conclude that hypersensitiveness in the gastro-intestinal tract is more likely to occur than in the skin. However, these changes cannot be seen by inspection, as is the case with hay-fever, urticaria, and so forth; and they cannot be picked up objectively by the diagnostician, and heretofore have been relegated to that "scrap heap" known as vague and secondary abdominal symptoms which would probably clear up with a dose of castor oil or by giving nature a little time. Typically, the lesion is characterized by anemia and eosinophilic infiltration of the parts affected and a surrounding area of erythema. This actually constitutes a hive, whether it be in the skin or in the gastro-intestinal tissues. It is usually associated with sensory disturbances, such as itching, and in abdominal tissues sometimes with pain. This pathological reaction may occur in any portion of the gastro-intestinal tract, from the lips to the rectum, and give rise to local and general reactions of allergy varying from mild local itching and swelling to profound shock and even death, if the necessary relief is not administered. Striking examples of this are the cases reported by Richet of a baby, sensitive to milk, who went into collapse and died after a feeding of 100 gms. of milk; and a second case of an egg-sensitive child of 8 years, who went into profound shock after ingestion of egg.

The immediate allergen that precipitates manifestations of hypersensitiveness in the digestive tract, is much more frequently a food than any other antigen. The food, or foods, are usually quite specific. When it is not a rather constant condition, the patient may realize, himself, what the offender is; he may observe that every time he eats pork, for example, he has abdominal distress. Then again his personal likes and dislikes of foods are sometimes guided by his own sensitivities, although unrecognized by himself and his physician as such.

Not infrequently, the continued feeding of one specific food over a long period of

time will sensitize a patient to that food and, conversely, occasionally withholding that article from his diet long enough will allow this acquired sensitivity to abate itself.

It is the theory of Duke that a person can be skin sensitive to a particular food, but the gastric and duodenal juices convert this substance in the process of digestion so that it becomes inert as far as creating symptoms is concerned. Conversely, it is our opinion that certain food stuffs to which the skin is not sensitive can produce trouble if they are not properly digested in the stomach and the intestines. Thus, we have the picture of the digestive juices acting as a protective agent in one case and, in another, actually producing a pathological condition. If the process of digestion is not chemically perfect, by-products are formed to which the patient is, or may become, hypersensitive. This is probably true also in the action of harmful bacteria and parasites causing fermentation and putrefaction. This fact may explain why skin tests of all types and strength may remain negative although repeated from time to time and containing an extract of a food that we are reasonably certain, from a clinical standpoint, is a trouble maker.

We find that the sequelae of gastro-intestinal allergy divided into three phases, acute, subacute, and chronic. It is hard to differentiate an actual acute sequela from the clinical symptomatology present during the allergic reaction, but we feel that acute flare-ups do occur without any definite allergic symptoms present.

The subacute is a milder manifestation, following continual and repeated upsets, and changes the physiology of the gastro-intestinal tract to an appreciable point. The chronic type of sequela is the most disconcerting and is the one which causes the patient most trouble in months and years after allergic attacks. These are the things that cause the gastro-enterologist and the surgeon trouble in taking care of the patient. They, of course, must be treated according to their clinical manifestations, regardless of the allergic etiological factor at the beginning. They are the things that the allergist should be able to control by stopping the atopic manifestations in their incipiency. Thus, the allergist is an important factor in the field of preventive medicine.

We are not at this time considering the effects of gastro-intestinal allergy on other organs in the body. Undoubtedly this type of allergy will cause permanent changes in other organs. The time does not permit us to dwell on these. As stated before, allergy is so new, comparatively, that we do not have the material with which to work. Some of these types of sequelae have many cases for study and presentation; others, only a scattered few. We shall try to give, in conjunction with the discussion, at least one example of each type mentioned.

One of the simplest sequelae, and yet one with which we have to deal more commonly than with others, is the presence of symptoms of indigestion, so often found in the patient suffering from a gastro-intestinal allergy. This is due to a disturbed chemical physiology in the stomach and the intestines. It is well known that most allergic patients have a low hydrochloric content of the stomach; whether or not this is the cause or effect is a disputed question. This, within itself, causes an improper digestion of the food in the stomach and results in a delayed and impaired outpouring of pancreatic secretions into the duodenum. This type of patient so frequently complains of a sense of heaviness in the stomach, a formation of gas, and fermentation of the food. He complains of a lack of appetite, sluggishness, and all the other evils that go with an improper digestion. This condition is undoubtedly due, in the allergic type of patient, to the more or less constant congestion of the mucous membranes of the stomach and intestinal tract. As an example of this type of sequelae, we present the following case:

An industrial worker, age about 45, known sufferer from hay-fever, at various times has experienced gas formation, indigestion and a general ill feeling in the abdomen. These sometimes accompany hay-fever attacks and sometimes do not. He is sensitive to foods as well as to pollens. Gastric analysis shows a low hydrochloric acid. At times when we were not able to demonstrate definite allergic symptoms, the man chronically suffered from indigestion.

In many of our cases suffering from allergy of the gastro-intestinal tract we find an acute diarrhea during and immediately following the attack. If this allergic condition keeps up for an indefinite length of time the patient may suffer from frequent attacks of diarrhea, even at times when allergic reactions are not present. This also, of course, is due to the constant irritation coming from the presence of intestinal hives. In this condition we have the picture of the acute and subacute sequelae and, in time, possibly the chronic type. If this is allowed to continue, a definite colitis—the true type, ulcerative—may develop, due to the secondary infection following the constant trauma in the mucosa. We may have the so-called spastic colitis, the spasm of the musculature of the intestinal tract and the resulting nervous manifestations; this, entirely separate and distinct from the allergic condition.

Another thing that may result from the constant hammering of allergic attacks of the gastro-intestinal tract is ptosis. This can be brought about in two ways. First, due to the chronic indigestion going on, the body economy may be impaired to such an extent that the patients do not receive the proper nourishment from their food; they lose weight, and a subsequent gastroptosis and coloptosis result. However, the most probable factor is the resultant loss of muscle tone, following these repeated attacks, with the disturbed physiology, allowing the stomach and colon to become atonic, and causing loss of peristaltic action and a disturbance in the gradient waves, as described by Alvarez. The muscle is no longer as capable as heretofore in originating and sending its contractilve waves. The following cases are typical of this type of sequelae:

A young woman, definitely suffering from asthma. Every time she has an asthmatic attack there is an accompanying severe diarrhea. This condition exists to such an extent that at times the stools contain blood. In the earlier history of her disease, the asthmatic attacks clear up and automatically clear up the diarrhea. As time goes on, the diarrhea continues long after asthma has cleared up, showing a subacute enteritis.

A college professor, age about 35, definitely suffers from hay-fever. The hay-fever is seasonal. He has definite attacks of abdominal allergy. Most of the time he is a sufferer from so-called colitis. The x-ray pictures show this to be of a spastic type.

Accompanying, or closely following, the above condition, we find chronic constipation, the reasons for which are more or less obvious if we consider the above statements. The musculature of the intestines has lost its tone. There is probably a descending column of fecal material which has not been properly digested. There may be a spasticity of the colon. There is an irritation at various places along the intestinal mucosa. Secretions have been disturbed. There is possibly a superabsorption of water from the colon. We probably have to deal with an asthenic type of person. There may be a marked ptosis of the colon. There may be constant irritation in the rectum, with a resultant spasmodic closing of the sphincters. All of these factors may be directly traceable to the patient's allergic symptoms. We present the following case to illustrate this type of sequelae:

A man, age 35, who has been a hay-fever sufferer for several years. For the past two or three years has had vague, indefinite pains in the abdomen following ingestion of certain food stuffs. He is definitely allergic to eggs and wheat. This man has been markedly constipated ever since his history of allergic attacks. He has a definite low hydrochloric content.

We have discussed the probability of irritation of the mucous membrane lining the intestinal tract, as a result of allergy. Incidentally, it occurs to us that the same thing may take place in the serous coating of the intestines, but unfortunately our cases have not been frequent enough to demonstrate this to our satisfaction. We feel that possibly there may be an exudation of serum into the peritoneal cavity, which in the course of time would become organized, and membranes and adhesions would be formed. This might result in the formation of a so-called Jackson's membrane in the region of the appendix and the cecum. If this condition does exist, one can easily see that there would be a disturbed physiology in the entire gastro-intestinal system. This is demonstrated in the following case:

A young college girl, known sufferer from hay-fever, had a diagnosis of appendicitis and was operated upon for same. The appendix was removed and found but little inflamed, if any. A few months subsequent to this time she again had a similar attack. She was again operated upon by another surgeon and a Jackson's membrane was removed. Since, she has had attacks of abdominal distress, some of which were allergic and some were not. Gastro-intestinal x-rays show many constrictions throughout the bowel, which are undoubtedly scrous membranes.

There is no doubt in our mind but that repeated attacks of intestinal allergy will cause definite and true appendicitis of all three types: acute, subacute, and chronic. It is logical to believe that, if hypersensitiveness can cause engorgement of the mucous membranes of the alimentary canal proper, it can cause engorgement of the lining of the appendix. It may cause this condition during an allergic attack, but it is more likely to result in appendicitis after the passing of the attack. This is due to the secondary infection in the appendix, following the more or less constant injection of its lining membrane. Of course, as stated, many patients are operated upon for appendicitis and the appendix is found normal, when all that was wrong was an allergic manifestation in the region of the cecum. But we must not allow this fact to blind us to the truth that real appendicitis develops from intestinal allergy. The following case illustrates this:

A Mexican man, first seen showing every evidence of appendicitis. This operation was performed and a low-grade acute appendix was removed. This man had a known history of gastro-intestinal allergy. After the removal of the appendix and before proper treatment could be instituted, and, at times, in spite of proper treatment, he still continues to have allergic symptoms of the abdomen. The point of interest here is that the man really and definitely had an inflamed appendix.

The statements that have been made in regard to the appendix are in all probability true of the gallbladder and the bile ducts. The same process undoubtedly goes on in these organs as in the appendix, resulting in an acute, subacute, or chronic cholecystitis, inflammation of the ducts, or even at times a hepatitis. From a physiological stand-

point, these disturbances are of more importance than the involvement of the appendix, because the secretions of the liver are interfered with and the excretions from the gallbladder are disturbed, resulting in an improper preparation of the food for metabolism. These, in turn, may set up a duodenitis, and it is entirely within the realms of possibility that the pancreas also may be affected in the same way. Because of the lack of positive evidence we would not go so far as to say that diabetes is a resultant factor; but, from a theoretical standpoint, this may be the case if the islands of Langerhans become affected. The case now presented is illustrative of this:

A young woman, about 25 years of age, gives a history of having a severe diarrhea, almost regularly at seven-day intervals. The stools are almost pure bile and contain very little fecal matter. She was sensitive to egg, pork and a number of other foods, as manifested in gastro-intestinal allergy and in hives. A cholecystogram was made, showing a definitely thickened, sluggish, non-acting gallbladder—definite evidence of cholecystitis.

We are free to admit that our clinical evidence to back up some of the statements we have made is far from being as plentiful as we desire. But it appears to us that we have seen enough subacute and chronic conditions in the intestinal tract following months and years of gastro-intestinal allergy to justify most of our statements in regard to this matter.

These sequelae as they arise, of course, must be treated symptomatically. If the necessity for surgery has arisen, then surgery must be done. But if these sequelae can be prevented by the allergist, in the beginning stages, we may save many of our patients from the operating table and from chronic ill-health. We certainly have no quarrel with the surgeons who find a surgical condition and operate regardless of the etiology. But we do feel that allergy should surely be investigated before a surgical diagnosis is made. There is a great deal to be gained by being on the alert in looking for allergy in the gastro-intestinal tract; there is much to be gained by what knowledge we have of these conditions; but the greatest justification for a discussion of this nature is the attempt to place before us an incentive for more effort to study and clarify many of the problems that are still poorly understood.

SUMMARY

1. Allergy is discussed historically and clinically, with special emphasis on the gastro-intestinal type.

2. Disturbed physiology due to gastro-intestinal allergy, is shown.

3. Serious sequelae in the gastro-intestinal tract may result from prolonged attacks of allergic reactions, and case histories are given.

4. Etiology of these sequelae should be recognized as allergy and proper preventive methods taken.

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DISCUSSION

DR. E. W. PHILLIPS, Phoenix, Arizona: It was something of a surprise to be asked to discuss, at a meeting of the Medical and Surgical Association of the Southwest, three papers on allergy. The subject seems to be coming into its own.

Without expecting too much from it, physicians need to understand the peculiar part which sensitization may play in the varying pictures of disease. The internist will find frequent use for a clinical knowledge of allergy, particularly as it affects the nutrition of those suffering from chronic ailments. The abdominal surgeon should know how accurately a food allergy may simulate serious organic disease within the belly, and the nose and throat man should be aware of what allergic reactions can do in his special field, where they may not only resemble sinus infections but may actually lead to such infections. The three papers which we have just heard offer information which is both useful and timely.

I shall discuss only a few points which, no doubt, the writers, if they had had more time, would have brought out more fully. While Dr. Presson mentioned that pain and discomfort may result from food sensitization, he might perhaps have emphasized the leading part held by pain in the symptom complex. Not infrequently food allergy hurts. Often it is pain in the belly and actual soreness that bring the patient under medical observation. If there are abdominal scars—and too many of the older cases have such scars—they serve as a focal point of the pain and tenderness. Many an appendix and many a gallbladder would still be in its original location, without detriment to its owner, if this fact had the recognition it deserves to have.

The other two papers also deal extensively with food allergy, but take somewhat for granted the method of its demonstration. Dr. Piness rightly emphasizes the importance of the personal and family history; it should be gone into minutely, and, while questioning the patient takes time, it should be done by the physician himself and not by a clerk. Almost any other procedure in the handling of a case can better be delegated than the history taking. If the history gives a promising clue, there are two ways of identifying the suspected foods. Both Piness and Balyeat rely considerably upon skin tests with extracts of foods. These food tests, while fairly satisfactory in the hands of the expert, are disappointing to the practitioner when he first tries them. In young children, with their limited dietary, a positive response to an offending food is usually frank and typical. Tests continue to be useful up to the age of puberty, but from that time on their reliability decreases

until in middle age, if any positive reactions can be elicited, the information derived from them is likely to be of historical value only. And this is not necessarily the fault of the extracts used; for the same extracts and the same technic which give a clearly positive test in a sensitive child, may produce only a negative or an atypical reaction in the adult. A negative food test proves nothing; a positive food test must be confirmed by the methods of clinical trial. By the intradermal method, more positive reactions are secured, but some of them are spurious or have no bearing on the symptoms. In short, the making and interpretation of food tests in the adult is a job for the specialist.

But "the proof of the pudding is in the eating," or rather in the NOT eating of it, and the method of elimination diets, described by Albert Rowe in 1928 and now widely used, while slow, is simple and effective. It need not involve any hardship to the patient if he is in a position to control his food supply. Rowe gives a series of set diets, which are varied according to the indications in the individual case. The method consists simply in feeding the patient for ten days or two weeks an adequate, though monotonous, ration made up of a few simple foods, preferably foods to which he is not accustomed. For us who work in the Southwest and whose patients come largely from other sections of the country, it is very easy to find unfamiliar foods. For example, the patient is told that he may have as much as he wants of the following, but absolutely nothing else—and nothing else must be used in preparing the foods. In the way of fruits, he is permitted pears, peaches, and persimmons; he is limited to one cereal, rice or corn or rye. The best method is to find out which one he has not been accustomed to eating—and this varies a good deal with the part of the country he came from—but wheat is always interdicted at the start. Lamb and mutton are the meats used in the first diet, and, by way of vegetables, two or three of the sort that are not popular, such as beets, carrots, and parsnips, but never tomatoes or potatoes. Some sort of greens, such as lettuce or spinach, is included. Fats are restricted to mutton fat and pure olive oil, which are really quite enough, and, by way of flavoring, he is allowed sugar, salt, and maple syrup. Plain gelatin is useful in preparing certain dishes. In planning the diet, one naturally excludes any food which the patient has found repeatedly to disagree with him.

For the first few days no result at all is to be expected from this elimination diet; then, if it contains nothing to which the patient is sensitized, there occurs relief of the symptoms which have been annoying him, and along with this relief a marked euphoria. He feels so much better, not only because he is rid of his distressing abdominal or respiratory manifestations, but because he is free from an allergic toxemia. He may, and usually does, gain weight even on this narrow diet, so that sometimes it is hard to persuade him to amplify it. But it should be amplified, adding one simple food stuff every few days until the offenders are found; and, once they are identified, these offending foods should be left out of the diet for at least a year.

Several students of allergy, among them Vaughan, Rowe, Duke, Eyermann, and Balyeat, have found that sensitization to food is a common cause of headaches. We are confronted immediately by a difficulty in definition: If the term migraine is to be limited to recurring hemicrania, often accompanied by digestive disturbance, occasionally accompanied by visual disturbance, then most of these headaches that we have been treating in allergic subjects are not true migraine. There are, moreover, other factors which enter into the production of the periodic disabling headaches under consideration. For one thing, these patients have a certain constitutional makeup: they are highly endowed with the capacity to feel pain; they are capable of great energy output, not necessarily sustained; their sympathetic nervous mechanisms are unstable. Some digestive disturbance usually accompanies the attack. The abnormal physiology seems to consist essentially in a localized disorder of peristalsis so that the bowel current is unevenly slowed, and may even be reversed. In a few cases it has been possible to demonstrate transient changes in the mucosa in the nature of edematous areas, revealed by the barium meal as filling defects; but commonly there can be shown only a localized spasm of the intestinal plain muscle. If the block is in the upper bowel, the patient is likely to have bilious vomiting, at the end of which the head pain subsides. If it is in the lower bowel he has to endure a longer period of suffering. Study of the history of these headache patients shows that relief comes only after emptying of the intestinal tract, and if the stasis has been low down they relate that the stools were exceedingly foul.

It can be learned from the patient, or more probably from the members of his family, that the headache sufferer is at times a greedy eater. He either stuffs at table by continuing his meal too long, or he (or more often she) over-indulges in chocolates or the like, between meals. In my own limited experience, it has appeared that many of these allergic headaches (not necessarily true hemicranias) are induced, not only by over-eating, but particularly by over-eating of certain offending foods; these same foods can be taken in moderation without symptoms.

Thus it appears that the action of food sensitization in producing headache is less simple and direct than that which takes place in other allergic manifestations. It seems reasonable to question whether such headaches are not produced by poisonous products absorbed from a bowel which is specifically irritated, rather than by the food stuffs themselves, just as the classical "morning-after" headache results not so much from the alcohol taken as from the intestinal toxemia consequent to a drinking bout which follows a heavy evening meal.

However, whether the true cause be allergy or gluttony, these headaches yield quite satisfactorily to diet therapy, and the elimination diet offers a rational method of approach in either case. The person on this diet is adequately nourished and not tempted too much by the pleasures of the table.

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CICATRICIAL STRICTURE OF THE ESOPHAGUS

STEPHEN A. SCHUSTER, M. D.
and
FRANK P. SCHUSTER, M. D.
El Paso, Texas

(Read before the El Paso County Medical Society, El Paso, Texas, Oct. 12, 1931.)

Fibrous or cicatricial stenosis of the esophagus means a narrowing of the lumen by scar tissue. This is always the result of ulceration of the esophagus. Due to the fact food must constantly pass over these ulcerated areas, there is frequently retarded healing, with resulting building up of fibrous tissue which contracts and produces stricture. One of the most frequent causes of this condition, especially in children, is the escharotic action of sodium hydroxide, when swallowed, on the esophageal wall. This chemical is a household article present in cleansing powder, lye, washing powder, and so forth. It is also used in the industries and about the house with calsomining, painting, and plumbing. In former years these common household articles did not have warning labels, but, due to the persistent efforts of the committee on lye legislation of the American Medical Association, a federal law has recently been passed requiring these warning labels. As a consequence, these cases are not as common as formerly, but far too common, because the public still must be educated to the danger. In spite of all the legislative and educational work, children still manage to secure these articles and swallow small amounts, usually with serious and often tragic results. Less frequently, stenosis is produced by other chemicals, such as ammonia, washing soda, bichloride, and acids. Trauma, such as knife and gunshot wounds of the esophagus, syphilitic and tuberculous ulcerations, diphtheria, scarlet fever, typhoid, and occasionally long-retained foreign bodies which produce ulcerations, may be the etiology. Lye causes an actual destruction of tissue. At first the tissues are edematous and swollen, then become ulcerated, form granulations which finally become pale from the invasion of fibrous tissue, which narrow the lumen by constriction. If not properly handled, this may result in complete atresia of the esophagus. Fortunately, lye stenosis is seldom annular, but eccentric, in character, some portion of the wall being uninvolved.

As to the treatment, the best of course is prophylaxis and the educating of the people to the ever-present danger of swallowing even diluted solutions. Immediate washing out of the mouth, esophagus and stomach with neutralizing solutions minimizes the danger but is generally ineffective in preventing after results.

Once stenosis begins, it is most important to start the treatment early, to prevent the narrowing of the lumen as far as possible. This is accomplished by dilatation of the stricture with sounds, by various means which I shall attempt to describe briefly in a very interesting case which we have at present.

B. N. W., age 14 months, was apparently a normal child, but had had some gastro-intestinal upsets. In April, 1930, the child was playing in the yard when the mother noted the child gagging and vomiting. An empty can of lye which had been partially filled by rainwater was discovered near where the child had been playing, and the possibility of lye burn was advanced. The child's mouth, throat, esophagus, and stomach, were washed out at once with vinegar, by a local doctor, and the child sent to Dr. Leigh at the Masonic Hospital. Dr. Leigh noted slight burns on the lips and mouth. The mouth, esophagus, and stomach, were again washed out with vinegar solution, no difficulty being noted in passing of a tube of fairly large caliber. The child was observed for a day or two and then sent home. The family physician placed the child on a diet rather high in fat content, and after a few weeks the child began to vomit. She was again returned to Masonic Hospital, where it was noted that she could take milk, orange juice, and graham crackers, but for a period of six days tried to vomit any food given. On May 12, barium meal was given and it was noted that it passed into the stomach promptly, with no stricture present. The child was dismissed from the hospital with a diagnosis of anorexia nervosa secondary to shock of ingestion of lye solution. When the child returned home it became sullen, would not play, and had to be urged to take food, which passed without difficulty. At other times, food would be regurgitated and vomited. The child frequently induced vomiting by sticking its finger into the throat. The child's behavior was that of a mental case, which appeared to be worse in the presence of the parents. For this reason, Dr. Leigh insisted on placing the child in the Cloudcroft Baby Sanatorium, away from the parents. Before going, on July 1, esophagoscopy was done, superficial scars were noted in the hypo-pharynx and some whitish areas in the esophagus extending about halfway to the cardia, but no stricture. In the sanatorium, the child made remarkable progress, gaining weight, apparently had no difficulty in swallowing but still presented mental symptoms. It stood for hours in its crib with a vacant stare, would not notice people or other children in the room, and at times would refuse food and water for long periods, although the food when taken apparently passed normally. When the child returned home, in the fall, to the parents, it again began its vomiting.

On December 18, 1930, about eight months after swallowing the lye, examination showed a marked constriction just below the sternal notch, with the upper portion of the esophagus beginning to dilate. This was noted on fluoroscopy with barium meal.

The child was taken to the Mayo Clinic, where these findings were verified. Treatment was then initiated, which we have continued to the present, dilating the stricture up to French-37, and this will be continued up to F-45. The child can swallow all food without difficulty and the mental symptoms have disappeared. When the treatment was started, the child could swallow small amounts of water at a time, and milk when taken slowly, but even

milk would at times cause obstruction. First, let us say that one of the main difficulties was the age of the child. Blind bouginage was absolutely contra-indicated because, the stricture usually being eccentric, perforation is almost certain, not through the cicatrized area but through the normal esophageal wall.

In the Jackson Clinic, dilatation is done under direct vision through the esophagoscope but even this is not without considerable danger, since the strictures are usually multiple and the second stricture difficult or impossible to see. A safer way is by passing a sound guided through the strictures by a thread or string. This is at times done under the guidance also of direct vision through the esophagoscope. The difficulty here is to get the thread down through the stricture. Dr. B. W. Sippy, in his lectures on this condition, always maintained that if water would trickle through the stricture, then a thread could get through, and it is certainly true that by persistence this can be accomplished in almost every case. Once the thread is through, the biggest part of our troubles are over, because, with the thread as a guide for the sound, we can dilate the stricture under ordinary circumstances with little danger of perforation. In the early cases gastrotomy was done, the string removed through the stomach wall and fastened so that tension could be put on it to guide the sound. It was soon found, however, that if sufficient amount of string is allowed to pass into the intestines, and even at times clear through the intestinal tract, tension can be placed on the string at the mouth sufficient to pass the sound without the necessity of gastrotomy. In the present case we have used sounds devised by Palmer. The stricture is now dilated to F-37. We shall not attempt to dilate the lumen to its normal size, only attempt to get a functional cure. The dilatations were made at first once a week and at present are carried out once every two weeks, and, as the tendency to contraction diminishes, the length of time between sounding will be lengthened. The case will be kept under observation for a considerable period of time.

The principle difficulty in these cases is getting the string through the stricture. Vinson and Moersch, at the Mayo Clinic, have advocated the use of the silk thread, which, they claim, can be swallowed and passed through a stricture much more easily than a linen thread, and the thread must be twisted and not braided. The thread must be swallowed slowly so as not to accumulate in a knot about the stricture, for then it would fail to pass. The child is induced to swallow the thread in soft or semi-solid foods, such as ice-cream, cereals, and so forth, and then the spool of thread is tied in a handkerchief and pinned to the back, so that it feeds out slowly as the thread passes through the gastrointestinal tract.

When sounding is done, the thread is cut and threaded over the sound, dilatation is done without anesthetic and the thread retied afterwards. The thread can be kept in for a long period of time. Where dilatations are two weeks apart, it is generally allowed to pass and the thread re-swallowed for the next dilatation.

In conclusion, we wish to point out the danger, especially to children, from ingesting many common household articles, that stricture from lye burns may develop many months following these burns. A child with this history should be watched over a long period of time. Attention is called to the importance of details in swallowing of the string and, once this is through, the major portion of our difficulty is over.

CASE REPORT OF CHOREA GRAVIDARUM

W. A. GUYNES, M. D.
El Paso, Texas

(Read before the El Paso County Medical Society, El Paso, Texas, September 28, 1931.)

The object of this paper is to present a case of pregnancy complicated by acute chorea, in the hope that the gravity of cases of a similar character may be recognized earlier and more effective treatment pursued.

Acute chorea may be defined as an acute infectious disease, characterized by involuntary coarse muscular twitching, psychical changes, and a propensity to endocarditis and polyarthritis.

The exciting cause is thought by many to be a non-hemolytic streptococcus, which produces toxin, and, by its action on the brain and basal ganglia, produces the symptoms characteristic of the disease. The disease is seen more frequently in children, and rarely in adults, except during pregnancy, which predisposes to it and favors a relapse in women who have had the disease previously. The attacks usually occur in young primipara about the first three months of gestation. It occurs more frequently in girls, and also is seen more in summer and spring months. Heredity is a predisposing cause. Rheumatism is not a cause, but rather a manifestation of the multiple symptom complex (rheumatism, endocarditis, and chorea).

The pathology is a low-grade meningo-encephalitis, which is thought to be so localized in the basal ganglion that it produces the specific movements. There is also congestion and hyperemia of the brain and meninges. Emboli are frequently found in the brain and probably originate from the endocarditis.

These emboli are not the cause of the specific movements, however.

The cardinal symptoms are choreic movements—which are spontaneous, irregular, involuntary jerks and twitches of various parts of the body,—various psychic changes, ataxia and weakness, the patient being unable to maintain a tonic muscular contraction.

The disease must be differentiated from hysteria, tic, or habit spasm, epidemic encephalitis, senile chorea, Huntington's chorea Friedreich's ataxia, and various intoxications.

CASE

E. L., Mexican, 19 years of age, was seen by Dr. S. H. Newman, July 19, 1931. She was pregnant, had twitching movements of the left side of the face and all limbs, and had a sore tongue.

Present Illness: The abnormal movements began one week ago. These were not very pronounced at first and she was able to sit fairly still in a chair. They continued to get worse, however. She also complained of a sore tongue of one week's duration. Appetite fair. Sleeps fairly well. Has always been troubled with constipation.

Personal History: Usual diseases of childhood. In December, 1925, was seen by Dr. Newman for choreiform movements in right arm and leg, more marked in her hand. Her mother stated then that she had been having chorea since May, which she attributed to a fall received in April. She was given treatment and was not seen again until January, 1927, when she returned to Dr. Newman and said her first attack had disappeared in a few weeks, and at present she was feeling nervous and a little jerky, as if the chorea was returning. She had been this way for three or four days. He again prescribed for her and did not see her until July, 1931. She said that her spell in 1927 lasted only a few weeks and was very mild. The patient states that she never had rheumatism.

Menses started in June, 1925, when she was 13 years of age. This was about the time she had her first attack of chorea. Has always been normal. The last period was October 27, 1930. This was her second pregnancy, the first one terminating at six months, about a year and a half previous. At this time she had a mild attack of chorea, from which she recovered immediately after the premature labor.

Examination: Reveals a well-developed and nourished young female not acutely ill, sitting quietly in a chair, with a few choreiform movements of left arm, leg and face. Mental state clear. Temperature 99.4°, pulse 120, blood pressure 120/80. Head negative. Tongue shows two small, one-eighth inch, deep-seated, very painful ulcers on the dorsal surface near the tip. Chest clear. Heart: rapid rate, regular rhythm, sounds appear distant. No murmurs could be heard, no thrills or shock on palpation. On percussion, no enlargement. Abdomen: about nine months pregnant, fetal heart sounds 130, postion vertex l. o. a. No neurological findings except the choreiform movements and exaggerated reflexes Laboratory: urine negative for albumin and sugar, few epithelial cells, and amorphous sediment.

Prognosis and Treatment: At the time of the examination, the patient was given potassium citrate and elixir of luminal. She was seen two days later by Dr. Newman, who found her worse. The muscular twitchings were more pronounced in the left arm and leg, and the tongue was now involved, and she could hardly eat or talk on account of not being able to control it. All these movements stopped when she was asleep (but she could not sleep much) and were exaggerated by effort or excitement. The tongue had also developed several other small ulcers. She was given capsules of sodium amytal to repeat as required, and also calcium. The sodium amytal would quiet her for only two or three hours and then she would wake up worse than ever, with a semi-delirium superimposed. The next day she was decidedly worse, it being necessary to put her on the floor, as she would not stay in bed, and have a person at each limb to hold her down. She was conscious, but unable to talk. Temperature, 102°; pulse, 140. She was given ⅜ grain of morphine by hypo, and hospitalization advised at this time for the purpose of emptying the uterus by cesarian section, if necessary. The family refused and called another doctor, who mistook her condition for hysteria. He gave her a dose of apomorphine, which caused her to go to sleep but did not produce vomiting, and told the family when she wakened she would be all right. She woke up in about two hours, however, worse than ever. Dr. Rawlings was then called in. He recognized her condition and gave her 1/100 of scopolamine. She was having uterine contractions at this time, which was about 3 p. m. He and Dr. Newman told the family she would have to be taken to the hospital and delivered.

I saw the patient at the hospital at 6 p. m. She was very wild, and it was necessary for several persons to hold her in bed. She was given 1/150 of scopolamine, which quieted her for about one and one half hours. Then she became uncontrollable again and I decided to deliver her immediately, if possible, and, if not, to put in a bag and wait a little longer. The uterine contractions, which had been coming every four or five minutes, now came every fifteen or twenty minutes, and were not very strong. The fetal heart sounds were around two hundred. She was given a light ether anesthetic and examination showed the cervix three fingers dilated, very thin; so it was manually dilated, and podalic version and extraction done. Had a slight tear in the cervix which was sutured and mercurochrome pack put in the cervix. One cubic centimeter of pituitrin given, followed by 1 cc. of ergotole every four hours. The patient was returned to the room and when she came out from the anesthetic was wilder and more uncontrollable than ever. This continued the fore part of the night, then she began to get weaker, failing to respond to any stimulation, and died the next morning at 9:15, her temperature going to 107° by axilla and pulse to 200 just before she died. The baby was 8½ months, did not cry vigorously when born, but the color and respiration were good. Was seen a few days ago and was doing nicely.

DeLee says that chorea occurring during pregnancy is in all probability toxemic or infectious in origin and that it usually appears before the middle of pregnancy, rarely in labor, and still more seldom after. It lasts from eight days to a month, disappearing, as a rule, with the expulsion of the ovum, whether spontaneous or induced. Twenty to thirty per cent mortality.

Buist collected 255 cases of chorea complicating pregnancy, with a mortality of 17.5 per cent. French and Hicks, in 1906, reported 29 cases, with a mortality of 10 per cent. They are skeptical as to the value of premature labor. Albrecht holds that the condition is usually toxemic in origin, and reports cures promptly follow the intravenous injection of 20 cc. of blood serum from a normally pregnant woman.

CONCLUSION

We might conclude from the rapid development of several symptoms and the fatal termination of this case that it will pay us not to temporize with even apparently mild cases of chorea complicating pregnancy in the latter months.

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HYPERTENSION—ETIOLOGY AND PROGNOSTIC TESTS

E. W. RHEINHEIMER, M. D.
El Paso, Texas

(Read before El Paso County Medical Society, October 26, 1931.)

Anything that tends to decrease the lumen of the vascular bed, or to interfere with its elasticity, or to increase the peripheral resistance, usually raises the tension within that bed. Weiss and Ellis found that the peripheral resistance of the arterioles of the general circulation, measured quantitatively, was twice as high in a group with hypertension as in a normal control group.

The change in lumen may be more or less restricted to a certain organ or area, as in the case of the renal type of hypertension; it may involve practically the entire vascular tube, as in a general arteriosclerosis; both of which cause varying degrees of elevated pressure ordinarily. In the senile type, however, usualy involving the larger vessels, the blood pressure may be within normal limits. Hypertension may also be of that obscure type, probably the most common and least understood, usually known as essential or benign hypertension, or hyperpiesia, in contradistinction to the arteriosclerotic type. A fourth type of hypertension is sometimes mentioned, the accidental, associated with some types of heart lesions.

Much speculation, experimentation, and theorizing, has not as yet produced any definite solution to the problem of causation of hypertension. In the renal sclerotic type, definite pathological changes are found in the renal vessels and the elevated pressure is probably compensatory, to force the blood through the narrowed vessels, and the same is true to a lesser degree of the general arteriosclerotic type, especially when there is considerable involvement of the smaller vessels. In the essential type, no definite demonstrable changes are found in the blood vessels, but there is evidence that it is dependent upon a vaso-constriction of the arterioles and many agree that, if a high pressure be maintained over a considerable period, a benign type will in many instances lead to a secondary sclerosis. Some, notably Fishberg, consider essential hypertension not as a separate entity, but as a form of renal arteriolitis and, therefore, a renal hypertension.

The possibility of some chemical substance in the blood affecting the vessels and causing elevated pressure has received attention for a number of years. Westphal and others consider increased cholesterol content of the blood, producing changes in the osmotic tension of the capillaries, as the factor in hypertension, but Weiss and Weinstein are convinced, after experimentation in seventy-five cases, that hypercholesteremia plays no part in the etiology. The same authors disprove the theory that increased constriction is due to altered function of the autonomic nervous system, this function being accompanied by increase in the potassium content of the blood and decrease in the calcium, as offered by several German investigators and Reed, Mathison, and others, in this country.

Dale, Dixon, and several others, have offered the view that guanidine or a derivative causes increased arterial tension, but this lacks definite confirmation.

High protein diet has, from practically the time of first knowledge of hypertension, been considered as a responsible factor, as has high sodium chloride intake, but Mosenthal, in particular, among the numerous investigators of this theory, has proved that high protein is not a factor, while several others have not been able to confirm the sodium chloride theory. It is significant to note that explorers have lived on a high meat diet over considerable periods of time without showing any evidence of arterial degeneration.

Other theories are those of increased viscosity of the blood, intestinal autointoxication, and focal infections. In support of increased viscosity, there is no confirmatory evidence and against it is the fact than no change in the viscosity has been demonstrated in essential hypertension. The toxic split-protein products from the intestine are for the most part destroyed in the liver and, while the undestroyed portions that do reach the general circulation, are generally credited with causing a variety of disturbances, there is as yet no evidence that they cause any degenerative lesions of the blood vessels.

Focal infections remain the by-word of the medical profession, and it is well known that they cause various disturbances in even remote parts of the body. However, there is nothing to indicate that there is any direct effect on the arterial system. It is possible that an increased pressure may be produced through the medium of a renal damage that

can be traced to an infective focus. Possibly future investigation may establish a connection between such a focus and a sclerotic artery. Certainly, it cannot be said that all cases of hypertension have an infection in some part.

Disturbance of endocrine balance or, possibly, entire dysfunction of an endocrine organ, as manifested by the rather frequent association of hypertension with the menopause, is a field that has received considerable investigation without, as yet, any definite and conclusive evidence of association with hypertension. Endocrinology, as yet very much in its infancy, offers, in my opinion, one of the best possibilities and perhaps when this subject is more thoroughly understood, it may develop that some pressor substance, secreted particularly by the adrenals, when not controlled by a counter secretion, may be the causative factor in essential hypertension.

Mention may be made of such possible factors as infectious diseases and syphilis. Thayer has found that a rather large percentage of hypertension cases give a history of previous typhoid, and the possible effect of syphilis upon the circulatory system, especially the aorta, is well known.

Age, per se, cannot be considered as a factor, for, while it is true that the incidence of degenerative lesions of the circulatory system is greater at the advanced ages, it is also true that sclerotic changes may be found at any age; in fact, cases have been reported in children.

Stress and strain undoubtedly have considerable influence, especially in this day of keen competition, hard application to work, and little relaxation. Degenerative diseases of the circulatory system are definitely on the increase and, while this may be partially explained by more accurate diagnosis, it is probably true that the burden is borne by the arteries, especially in those whose heritage is an early tendency to arterial changes. The hereditary tendency to early arterial hypertension seen in some families, on careful inquiry seems unquestionable. This constitutional predisposition not only consists of structural changes, but is frequently manifested by psychic disturbances, as hypersensitivity, inclination to worry, phobias, and the like. I have in mind one family no male member of which has lived beyond the age of fifty-five in three generations, all deaths being due to diseases of the cardiorenal system and all showing an early tendency to elevated blood pressure.

Hypertension sometimes appears as a part of the syndrome of poisoning by certain chemicals and metals, notably lead, and the frequent association with obesity is striking.

Numerous other causative factors have been theoretically offered, but these have not been established. The etiology of hypertension is complex and, as yet, no single operative factor of the numerous ones proposed can be made responsible. It is important, however, both from the standpoint of therapy and prognosis, that a search be made for possible etiological factors and proper valuation be placed upon them.

It is generally understood that any marked and constant increase in the blood pressure above the average accepted for any age, reduces the life expectancy for that age. The experience of life insurance companies, with their masses of statistics, bears this out. In general, these statistics indicate that tensions of plus twenty-four for a given age show a mortality of seventy per cent above the expected, and the increase in mortality rises in proportion to the abnormal tension. This does not necessarily mean, however, that in individual cases increased pressure is not compatible with longevity. The insurance statistics cover large groups, with no attention paid to individuals, with which physicians are called upon to deal. In looking forward to what may be expected in any given case, there are so many factors involved that prognostication remains a difficult problem.

The condition of the kidneys and heart; the temperament of the individual; the age, it being known that at the higher ages elevated blood pressure is better borne than at the lower; the duration of the hypertension, often difficult to estimate; the condition of the arteries; the variability of the pressure and the height of the diastolic pressure; all bear important relations to the prognosis. With a marked sclerosis, the diastolic pressure, a measure of peripheral resistance, is relatively fixed and unvariable; while, in the purely spastic stage, this pressure is variable. Signs of myocardial change make for a bad prognosis, while, in general, a lowered renal reserve is ominous. All these factors can be worked out by clinical and laboratory methods but recently two tests have been offered by which the degree of sclerosis or vascular damage can be quickly estimated.

Grimes has recently shown that, when a forced expiration is made with the air exit closed, the blood pressure drops, and, when breathing is resumed, there is a marked elevation of the pressure. This, he explains, is due to the fact that normally the intrathoracic pressure never exceeds the intra-abdominal but, when the forced expiration is made with the exit closed, the intrathoracic pressure is increased, the blood thereby be-

ing dammed back from the heart. When breathing is resumed, the heart and arteries are suddenly overloaded, causing a sudden wave of arterial tension. When this rebound does not exceed twenty-five or go beyond the individual's pressure at rest, it is considered normal, but pressures rising to seventy-five or more are abnormal, the high rebound being due to diminished elasticity of the arterial walls. In a series of one hundred cases with high rebound compared with one hundred normals observed over a period of several years, it was found that the series with high rebound showed a mortality of thirty-two per cent as compared with twelve per cent in the normal, the higher mortality being due to renal or vascular failure. He observes that this test is a positive measure of arterial elasticity and a high rebound is an indication of arterial fibrosis.

Stieglitz has also recently reported an amyl nitrite test to determine the degree of relaxability of the arterial walls, as an aid to prognosis and as a denominator of the degree of vascular disease. "Spasticity and hypertonicity," he says, "early phenomena of the progressive disease, are amenable to treatment," and cases encountered in this stage offer a relatively good prognosis, while, if sclerosis is present, the change is permanent, not so amenable to treatment, and with a less hopeful prognosis.

To apply this test, the individual's pressure is determined as accurately as possible, after which the contents of one pearl of amyl nitrite are inhaled deeply three or four times. When the maximum effect is reached, manifested by flushing of the face, a sense of fullness in the head or vertigo, the blood pressure is rapidly determined two or three times, after which the disagreeable effect can be lessened by the use of aromatic spirits of ammonia. The fall of the systolic is noted, but of more importance is the degree with which the diastolic approaches the normal. This percentage of the approach of the diastolic to the normal measures the degree of resistance, or, indirectly, the degree of sclerosis.

To determine the effectiveness of the Stieglitz test I have, during the past seven months, applied it to twenty-seven cases of hypertension of various classes with results as indicated in the accompanying chart. To rule out possible extraneous influences and to determine the pressure as accurately as possible, that given under the heading "Before Test" is an average of at least four readings on different days, while the pressure given under the heading "Later Results" is an average of all determinations made during the period of observation designated as "Elapsed Time."

In this series the wrong estimate was made in two cases, a higher percentage of error than in the series reported by Stieglitz. This may be, at least partially, accounted for by the lesser degree of skill in interpretation. In general, however, these results correspond rather closely with his, especially with regard to the poor type of response in those cases showing a low renal reserve as determined by the inability of the kidneys to concentrate the urine on deprivation of fluids.

x	Age	B. P. Before Test	B. P. After Amyl Nitrite	Percentage Diastolic to Normal	Estimated Degree of Sclerosis	Prognosis	Elapsed Time Since Test	B. P. Later Results	Comments
.	43	184/116	132/ 88	100	0	Good	10 mo.	128/ 90	
.	65	194/112	178/100	45	+ +	Poor	8 mo.	170/ 98	Has diabetes.
.	41	200/112	140/ 92	70	+	Good	11 mo.	200/106	Prognosis Incorrect.
.	72	220/118	190/110	25	+ + +	Poor	5 mo.	206/108	Low renal reserve. Died cerebral hemmorrhage.
.	67	190/ 98	150/ 86	100	0	Good	9 mo.	170/ 82	
.	59	180/112	150/ 92	80	+	Good	6 mo.	200/102	Prognosis Incorrect. Probably has Aortitis.
.	48	172/106	120/ 82	100	0	Good	12 mo.	130/ 84	Has attacks severe migraine.
.	52	240/130	150/104	60	+ +	Fair	4 mo.	160/ 94	
.	51	188/104	180/100	20	+ + +	Poor	6 mo.	190/110	Syphilis. Dilated aorta.
.	78	210/120	170/110	40	+ + +	Poor	3 mo.	174/108	Has diabetes.
.	58	200/122	130/ 92	90	0	Good	7 mo.	140/ 94	Occasional Anginal attacks.
.	46	184/114	142/ 88	90	0	Good	10 mo.	144/ 90	Pul. T. B. 15 years ago.
.	31	162/100	124/ 86	80	0	Good	8 mo.	128/ 88	Inactive syphilis.
.	74	190/ 98	158/ 92	75	+	Good	8 mo.	166/ 86	Has angina on effort.
.	52	190/120	160/102	50	+ +	Fair	9 mo.	154/ 98	Obese.
.	68	200/110	190/104	25	+ + +	Poor	10 mo.	180/106	Obese. Enlargement heart.
.	69	220/130	196/122	20	+ + +	Poor	6 mo.	200/118	Died of cerebral hemorrhage.
.	43	170/ 98	140/ 80	100	0	Good	7 mo.	130/ 80	
.	76	200/108	180/106	0	+ + +	Poor	3 mo.	190/110	Low renal reserve.
.	67	170/116	166/108	30	+ + +	Poor	6 mo.	180/112	Toxic Goitre.
.	68	172/ 96	160/ 90	100	0	Good	11 mo.	150/ 88	
.	46	260/150	240/140	10	+ + +	Poor	4 mo.	250/140	Low renal reserve. Died cardiac failure.
.	71	280/130	240/120	35	+ + +	Poor	6 mo.	230/118	Low renal reserve.
.	42	230/130	180/100	60	+ +	Fair	8 mo.	184/ 96	Occasional Angina.
.	63	190/100	150/ 90	100	0	Good	5 mo.	150/ 92	
.	25	160/100	132/ 84	80	0	Good	10 mo.	128/ 86	
.	69	174/112	122/ 86	100	0	Good	1 mo.	130/ 84	

This is well illustrated by case number 4, a brief resume of which is as follows.

Male, age 72, watchman, seen first January 6, 1931, and giving a history of attacks of paroxysmal tachycardia for several years previous. Chief complaints, dyspnea, vertigo, and tachycardia, not severe enough to interfere with his work. Maximum specific gravity of urine 1.010 on twelve hours' deprivation of fluids. Given amyl nitrite test on January 12th, five previous readings having determined his average pressure as 220/118. The fall of the diastolic was slight, indicating marked sclerosis and without much hope from therapy. On June 19, 1931, while in bed, suddenly became unconscious and paralyzed on left side. Died June 21st, evidently from cerebral hemorrage.

In contrast is case number 1 as follows.

Male, age 43, clerk, seen first December 19, 1930, giving a history of having been declined for insurance because of high blood pressure. Occasional vertigo for three years. Overweight 25 pounds. Hard worker. Little exercise. Urine maximum specific gravity on 12 hours' deprivation of fluids was 1.032. Four readings established blood pressure average as 184/116, which, on inhaling amyl nitrite on December 26th, fell to 132/88, indicating little or no sclerosis. Placed on reduction diet, moderate exercise, and less application to work. Ten months later his weight is practically normal, there has been no further dizziness, feels better than in years and average blood pressure is 128/90.

Case number 7 is interesting from the standpoint of a possible allergic factor.

This case, a female, age 48, was first seen on September 5, 1930, and gave a history of hypertension of four years' duration, and severe attacks of headache accompanied by nausea and vomiting. The blood pressure was always higher during the headache attacks, on one occasion being 200/108 with an average of 172/106. There was a marked fall, to 120/82, on inhaling amyl nitrite, and a favorable prognosis was indicated. Skin test for egg protein was strongly positive and diet arrangement with elimination of eggs has resulted in a marked amelioration of the headaches and a practically constantly normal blood pressure. Sodium sulphocyanate was given during the early period of observation, but there has been no medication of any sort for the past nine months.

The terms "elevated blood pressure" and "increased vascular resistance" are frequently used interchangeably and the height of pressure, particularly the diastolic, has been used as an index of this resistance. This, however, gives no idea as to whether the resistance is due to a spasticity alone or whether actual sclerosis is present. Case number 12 gave a preliminary average blood pressure of 184/114, with very little diastolic variation on five readings, and with this as a criterion the suspicion would be that considerable arterial change was probably present. On testing, the pressure fell to practically normal, indicating that no sclerosis was present, and that therapy should be effective. Later results seem to bear this out.

The individual prognosis in hypertension, being dependent upon so many factors, is difficult to estimate. A knowledge of the stage of the disease, whether or not sclerosis is present, is of considerable importance in an evaluation and, although partial error is to be expected, the Stieglitz amyl-nitrite test seems a fairly reliable method for quickly determining the relaxability of the vascular walls and thereby giving, indirectly, an estimation of the presence or absence of sclerosis and the degree, if present.

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INTESTINAL OBSTRUCTION

F. P. MILLER, M. D.
El Paso, Texas

(Read before El Paso County Medical Society, November 9, 1931.)

Aside from the symptoms accompanying a strangulated hernia, I have never been satisfied with my ability to make an early diagnosis of intestinal obstruction. I do not feel that we have enough papers on this important condition. In my opinion, no condition demands from internist and surgeon more skill and prompt action than the acute abdominal diseases.

When locating inflammatory lesions in the abdomen, the surgeon should rely upon his knowledge of anatomy. In the diagnosis of obstruction, his knowledge of physiology should have full sway.

As a rule, intestinal obstruction is the acute termination of a chronic disease, as the strangulation of a hernia or an obstruction due to a malignant disease. It is rarely an acute, new disease process.

The symptoms of acute intestinal obstruction are dependent upon many factors. It frequently happens that these factors change from time to time, and the physician can be misled by these changes. The history as to the onset of symptoms is important, but can seldom be relied upon, because of the difference in capacity of individuals to relate the details in proper sequence.

The general appearance of the patient with an intestinal obstruction is deceptive in the early stage. He often appears to have some minor gastric upset.

Cope states that, "The general rule can be laid down that the majority of severe abdominal pains which ensue in patients who have been previously well, and which last as long as six hours, are caused by conditions needing surgical intervention."

In all cases of obstruction, there is an attempt on the part of the intestine to overcome the obstruction by increase in muscular activity. This results in cramp-like pain, one of the earliest, and one of the most important, symptoms. The pain has a sudden onset, and is located in the region of the umbilicus or upper abdomen. It is usually intermittent. Frequently, the patient will want to explain and treat the condition for some error in diet. He will have used enemata, taken salts or oil, and used a hot-water bag. Vomiting soon follows, the time of its onset depending upon the location of the obstruction. Where the obstruction is low in the ileum or colon, the vomiting and other symptoms will develop more slowly; where high in the tract, as the duodenum, these symptoms appear early. The vomiting increases in frequency as time passes, and is aggravated by the administration of oil or salts. At first, the vomited material consists of stomach contents, then of bile-stained fluids; still later, the vomitus is brown fecal matter, with the characteristic odor. The diagnosis should be made before the appearance of fecal vomiting.

A classic description records peristaltic waves visible through the abdominal wall, but my cases, in most instances, have failed to reveal this sign. Upon one occasion, a consultant demonstrated these peristaltic movements to my satisfaction after a close observation for twenty minutes. My advice is to observe the abdomen for a long interval before recording "no visible peristalsis found."

Abdominal distention will be present in all cases. This symptom may develop late. In the obese patient, palpation of the abdomen seldom reveals anything of definite value. Tenderness may accompany the distention. Scars from previous operations should have great consideration, as to the possibilities of adhesions and bands being the cause of the obstruction.

A mass may be felt in children where intussusception is the cause of obstruction. Here the pain is more apt to be constant and the stools bloody.

Auscultation of the abdomen should never be neglected. The presence of borborygmus can be detected in most cases of obstruction, and will be absent in many other acute cases requiring differential diagnosis, as in acute cholecystitis and in adynamic ileus.

If vomiting continues, there will be great loss of fluids, or dehydration, with decreased chorides. The resultant condition we know as alkalosis. As interference to the blood supply of the bowel increases, there is added the factor of toxemia.

In acute intestinal obstruction, obstipation cannot be relied upon. It is often lacking. Enemata will frequently produce one or two actions, with the passage of gas. This has often been accepted as evidence that obstruction does not exist.

The x-ray finding of multiple fluid levels, overlaid with gas, is pathognomonic of intestinal obstruction. Such examination, however, can seldom be made before the patient enters the hospital.

In differential diagnosis, nearly all abdominal lesions must be considered. The list is a long one in most text-books.

During the past year, I have seen two cases of intestinal obstruction due to large gallstones in the ileum. My experience includes one case following a ventro-suspension of the uterus. Dr. M. O. Wright found one case of obstruction due to long, fibrous bands or threads, developed from an unsuspected tuberculous peritonitis.

It is desirable, but not essential, to know the exact cause of the obstruction. Even if symptoms are indefinite, it is an act of wisdom to consider the possibility of obstruction, and to know that safety lies in early surgical intervention.

Morphine does more harm than good in a serious abdominal disease. To suspect an obstruction and yet leave the question open for ten or twelve hours, obscured by a narcotic, is to gamble with a life.

Spinal anesthesia is growing in favor. Its chief advantages are three: First, the difficulty which the surgeon encounters in forcing distended colon and ileum back into the wound is eliminated by this method; second, blocking the spinal nerves decreases shock, and for the patient already in toxemia, added shock is frequently a factor in tipping the scales in the wrong direction; third, by blockage of the inhibitory nerves to intestinal musculature, spinal anesthesia increases peristalsis and eliminates the possibility of postoperative ileus.

I frequently employ a high enterostomy with a Wetzel tube, and believe it to be a life-saving measure.

Much has been accomplished by preoperative and postoperative treatment. No matter how promptly and accurately diagnosis is made, nor how skillful the operation, these factors will be discounted by lack of postoperative care. Administration of normal saline by intravenous or subcutaneous route, in large amounts, frequently repeated, is advocated by most surgeons. Gastric lavage is of extreme importance. In my opinion, eserine, given in doses of 1/50 to 1/100 grain, repeated every three to four hours, is the best stimulant to unstriated muscle, and therefore, combats post-operative ileus.

THE EPIDEMIOLOGY OF CEREBRO-SPINAL FEVER

R. J. STROUD, M. D.
Tempe, Arizona

(Read before the Maricopa County Medical Society at Phoenix, Feb. 23, 1931.)

Synonyms: Meningococcic Infection
(a) Epidemic cerebrospinal meningitis.
(b) Posterior basic meningitis.
Meningococcic Meningitis.

The first undoubted account of the disease is of an outbreak at Geneva in 1805 reported by Vieusseaux. In 1806, five necropsies were done following a description of the disease with an epidemic at Medfield, Mass., by Danieson and Mann. These men were ignorant of the Geneva outbreak. The disease persisted in New England until 1816, and was investigated by the Massachusetts Medical Society. The Prussian army was attacked, 1806 and 1807. In Britain, Alexander Monro described the disease, calling it posterior basic meningitis; but the first postmortem confirmation was in 1830, by Sunderland.

The disease no doubt existed before 1805 but was confused with epidemics of typhus and other malignant fevers. Some of this typhus, so-called, must have been meningitis. (The first case reported by a physician in the Coldwater district in the present outbreak was described by him as possible typhus.)

Four periods are described between this first description and the Boston outbreak in 1897: 1805 to 1830; 1837 to 1850; 1854 to 1874 and 1876 to 1882. New York suffered in 1904 and 1905, and Texas in 1912. Portugal had a tremendous outbreak in 1901 to 1903; France in 1909 and 1910; and Silesia, 1905 to 1907. During the world war, the congestion of men in training camps accounted for an increase of the trouble. In England and Wales, in 1914 there were 300 cases and 206 deaths. In 1915 there were 2,343 cases and in 1916, there were 1278, and so on, with a mortality of 65 per cent. It is not a disease of the open warfare camps. While it attracts attention during epidemics, it is always smouldering in endemic form, with chronic carriers responsible for the incidence. After sporadic cases become more frequent, there is a very fine dividing line between a real epidemic and an increased number of cases which may be only sporadic.

Arizona has had two periods of heavy infection, in Maricopa and Gila Counties in 1929 and 1930. In Maricopa County, it died down, as do most epidemics, in about six months; in Gila county, it had two waves, one in the winter and another in the middle of summer when there should have been a dying down of the disease. Prompt measures to find carriers and to keep contacts under quarantine is the only way to stop an epidemic. To shut down schools, churches, and any other gatherings, does not help, for contact with carriers goes on. In Graham county, the State Board of Health opened schools and churches, found four main sources of spread, quarantined the suspects until two negative cultures were obtained forty-eight hours apart, and the disease stopped, except for sporadic cases, immediately. This year, Gila county has had some cases at Christmas, all located in overcrowded cold shacks and confined to five or six families. None have been reported last week as the cases and contacts were removed to the detention hospital supported by the county. Of the 43 contacts located, 36 proved carriers at the first test.

Maricopa county, beginning in December, has had some cases. One group was in Chandler, where the contacts in December were not cultured; another group was at Coldwater, and another in Phoenix, which, from the location, must be from the same group of carriers. The two Scottsdale cases were no doubt from the same focus as the Phoenix cases, as they visited Phoenix five days before the disease manifested itself. All close contacts showed negative cultures and there has been no spread in that locality. Fourteen cases were reported in January, 1931, from Maricopa, 23 for the state as compared with 46 cases in 1929 and 57 in 1930.

The character of the disease varies. This year the mortality has been very great. The septicemic rashes and other manifestations vary. In the world war, Dopter observed that the type changed from his type A to B, or from Gordon's types 1 and 3 to Gordon's types 2 and 4, septicemic cases becoming more frequent.

The time of the year most advantageous to the organism seems to be the first six months, when it is colder, or a sudden increase in humidity, or when smoke and dust make for frequent coughing. This is disputed by some, but has proved true in Arizona except for the Miami outbreak, with a secondary incidence in summer. There is no doubt that overcrowding is the main cause of the beginning of the spread. Overfatigue is a cause, as well as epidemics of influenza, which both precedes and follows meningitis. The usual age is below five years, which has not been borne out by Arizona epidemics.

Coryza, by adding to the sneeze and cough reflex, may spread the disease, but the

extra secretion in the nasal cavity seems to be protective. A carrier with a cold and not susceptible himself would be a menace. Adenoidal tissue seems to be a factor in carriers and Clemson found 50 per cent more adenoidal tissues in most carriers.

Animals do not get the disease, and, as the organism is fragile outside of its habitat in the nasopharynx, there is little danger of mediate bodies or domestic pets carrying the disease. The process is from throat to throat, by droplets. Very seldom can the disease be traced from case to case except in the same family, and then a common carrier may have been responsible. Carriers are from 10 to 20 times commoner than the cases. When carriers go above 20 per cent an outbroeak will undoubtedly occur. The disease is of very low infectivity, else we should all have succumbed long ago. Chronic carriers are the real cause of the continuance of the disease. Casual contacts who are carriers are free from the organism in from three days to three weeks, most of them becoming negative to culture in less than one week.

Cultures grow best on media somewhat more acid than the ordinary organism likes and therefore are more or less distinguished that way. Ordinary media may have them outgrown. In taking throat cultures, a curved applicator is passed through the mouth and into the nasopharynx without tonsillar or other contact and then withdrawn carefully. After placing on the medium the tube must be kept warm or else you will get negative smears from positive throats. In cases where the organism is in doubt, it may take the laboratory five days to distinguish it.

Entrance to the meninges is from the nosopharynx through the blood stream, giving a generalized disease, with localization in the meninges. True meningococcic septicemia and death may come before the meninges are invaded. It may also be possible for the organisms to pass through the cribriform plate of the ethmoid by direct continuity, or through the lymphatics of the region.

Spraying of healthy noses or throats with antiseptics to reduce the incidence of disease is not advocated. Most of the sprays may break down the protection of the secretions already present. It is claimed, however, that the nasal mucus favors the growth of the organism. Only the mildest of washes should be used. I have never done it, but it would seem logical to use very mild solutions of a stain like acriflavine or pyridium which penetrate without breaking down and do kill cocci of all varieties, especially meningococci or gonococci.

Vaccines have never been proved. Simon Flexner advocates against their use. One enthusiastic health physician in Graham county last year had great faith in this procedure, and vaccinated his own children. He took them around with him during his calls, thinking them safe. At about the sixth or seventh week, when the fullest protection was expected to be present, two of the children contracted the disease and died. The disease hits so sporadically that it is almost impossible to prove a case for vaccinating.

Control of the contacts is the real essence of protection. The regulations of the State Health Department make it compulsory to keep contacts quarantined until two cultures taken forty-eight hours apart, are negative. The contact carriers soon lose the organism and should not be subjected to harsh sprays, lest their resistance locally be broken down and they contract the disease. Vaccines have failed to clear up chronic carriers, although dried serum insufflations to the nasopharyngeal and nasal tissues may be of benefit.

Chronic carriers are very resistant to treatment. The sinuses and redundant nasal tissues may harbor the disease.

Removal of persons to prevent overcrowding will help prevent epidemics.

OUR SOCIETY

(Presidential Address)

E. PAYNE PALMER, M. D., F. A. C. S.
Phoenix, Arizona

(Read before the Maricopa County Medical Society, Jan. 12, 1931.)

Our By-Laws require that at least one meeting during each year shall be set apart for a discussion of the business affairs of the profession of the county, with the view of adopting the best methods for the guidance of all. We are complying with these requirements by presenting the evening's program.

In 1931, our Society will be administered without fear or favor and with no partiality or prejudice. I hope for cooperation from the majority of the members. All of the members must observe the "Principles of Medical Ethics" of the American Medical Association. It is going to be necessary for some of our members to be more careful about open abuse of their fellow-members and unethical publicity. This will not be tolerated, to the end that the profession of medicine may occupy that place in its own and the public's estimation to which it is entitled.

The importance of our Society and the

safety of its members, require that it be incorporated. We need a strong organization representing the collective judgment of our local profession which will speak with authority on medical ethics and the business of our organization and act as a unit in all of our relations with the public, press, and governmental agencies. I should like to have action on this matter during this meeting. We have outgrown our old Constitution and By-Laws. New ones to comply with our present requirements should be drafted and adopted.

We have professional control over the Social Service Clinic and, in case a county or city hospital is built, we should have professional control over it also, as it is not possible for them to succeed without our services. In fact, the doctor is the "all important" part of these organizations. During the year most of our members will be called upon to assist in the work of the Social Service Clinic in the new building donated by Mrs. Dwight B. Heard. This building is completely equipped for this work and it will be a pleasure to work there. Our two hospitals have agreed to furnish senior student nurses to assist with the work, this to be an addition to the regular staff of nurses. Clinics in each of the main specialties of medicine and dentistry will be held regularly. The services will be rotating, so that each one of our members will be asked to serve. In the appointment of the heads of the departments, no offense should be taken, as each member who shows his willingness to assist will head the department of his specialty at some time during this year, if it is possible to rotate the service enough times, and in case some members do not occupy that position this year, the officers for 1932 will be asked to give them proper recognition during their term. So please assist in this very worthy work. It can be made a very important educational part of our Society and educate the public to see what the medical profession is doing for charity, so we may receive the respect and support of our community. An inquiry and check is being made on the patients to determine that they are worthy of charity. Those found financially able to pay, are refused treatment. If any of our members find patients in the clinic that can afford to pay, please refuse to treat them in the clinic and report them to the clinic authorities. The following members have been appointed first, because they have served the clinic faithfully in the past. There are still others entitled to first honors and they will be handed out to them later.

Medicine: Dr. Frank J. Milloy; Surgery: Dr. A. M. Tuthill; Pediatrics: Dr. W. P. Sherill; Chest Diseases: Dr. Howell Randolph; Eye, Ear, Nose, Throat: Dr. W. A. Schwartz; Orthopedics: Dr. J. M. Greer; Obstetrics: Dr. Floyd Sharp; Genito-Urinary: Dr. George Shields; Gynecology: Dr. J. H. Patterson; Radiology: Dr. W. W. Watkins; Pathology: Dr. H. P. Mills; Dentistry: Dr. W. A. Baker. They will call on you to assist; please give your services cheerfully and generously.

We have a very deplorable condition in our County; one that costs many lives each year. Every year we have major epidemics of diphtheria, measles, cerebrospinal meningitis, acute anterior poliomyelitis, scarlet fever, and so forth, with no provision for the care of our contagious cases. Our two general hospitals have no means of caring for such cases, yet cases of cerebrospinal meningitis are being smuggled into the hospitals at night.

When I came here in 1900, the health of the citizens was considered of enough importance to maintain a county contagious hospital. In recent years it has been abandoned and we of Maricopa County, occupy a singular position probably not equalled by any other rich county in the whole United States of America. "The Gold Spot of America" without a place to care for its contagious cases—and yet we invite the people of the world to come here. We can tell them that we have everything with the exception of a good county hospital.

At the present time, we have a serious epidemic of cerebrospinal meningitis and no attempt is being made to investigate or deal with the situation. I think it is high time for this Society to tell our city, county and state health officers to get busy and act immediately and vigorously. Follow the examples of Globe and Miami in Gila County. They had a similar situation a year ago and handled it very admirably and satisfactorily.

I appoint Dr. R. J. Stroud, Chairman, and Dr. C. W. Sult and Dr. A. C. Kingsley, members, of the Committee on Public Health and Legislation.

In case of a new organization, a Committee on Publicity should be added. Its function should be to use modern business methods in distributing public health information and be on the lookout for unethical articles in our local newspapers.

Good, properly prepared papers are necessary for the success of our meetings. I will ask that you voluntarily arrange with our Secretary for the presentation of papers, so we can have our program arranged for, far in advance of the meetings.

These are some of the things that are demanded of you: to uphold the honor of our

profession, to protect our Society, to be charitable to the poor, to reduce the number of contagious cases and deaths, to render service in matters of public health and legislation, and help to further educate our fellow members. These we must do if we expect to deserve and receive the endorsement of the community.

ETHICS OF CONSULTATION

H. B. GUDGEL, M. D.
Phoenix, Arizona

(Read before the Maricopa County Medical Society Jan. 12, 1931.)

Discretion, cheerfulness, tact, courage, and loyalty are essential qualifications of a man who wishes to engage in the practice of medicine. There is probably no profession that carries so many embarrassing moments, so many secrets of others, so many honest endeavors, so many disheartening, discouraging hours, so much sorrow, and yet must display so much cheerfulness, as that of the physician.

The ethics of a consultation in medicine is probably the most critical test of the attitude of one physician to another. The consultant is in a crucible, as it were, in which the least unnecessary mis-step or word, act or look, is taken into account by the physician in charge. Therefore, it behooves us to render our help, aid, or moral support, with all due respect, carefully considered. Above all, remember that the consultant is not in charge of the patient but is present that he may help in determining, from his knowledge and experience, coupled with the history, symptoms, and study of the attending physician, the condition of the patient and what is advisable in treatment.

As a rule, the fewer changes in treatment, the better; especially so, if the attending physician be a young man. It has been my experience that the vast majority of the older physicians are considerate and exceptionally kind, on such occasions. Very probably they recall their many past experiences and their own professional struggles.

The physician in charge is due first consideration. He has given the consultant a complete history of his patient, the symptoms, the results of his study and work. The consultant, has the opportunity of examination of the case in hand, for his comparison in the findings. The case should never be discussed before the patient. There should be no evidence of affected superiority. The case is to be studied as an entity and closed as such until after conclusions are reached. Then, frequently, the attending physician requests the consultant to give the results of their consultation to the patient, the family, or both. There is never any use to change diagnosis to the patient; let your opinion be in secret to the man in charge, and ever hold it so. The consultant must protect the physician whether he is present at request of patient or patient's doctor.

In leaving the patient, words of encouragement to both patient and his doctor are worth while and worthy of the consultant's best consideration. Simple, terse sentences are the better, words that will strengthen the friendship and confidence of the patient for the attending physician.

The consultation visit completed, his ties to this patient cease, unless again called by the attending physician. It does not behoove the consultant, on account of friendship, to call on the patient again unless in the presence of, or requested to do so by, the attending doctor.

Nothing should cause him to approach the bedside as physician unless the first doctor is present and, in discharge of the first doctor, no inducements should cause the consulant to take the case. If the first physician is discharged, the consultant is bound by justice to refuse to attend the case under any and all conditions, unless the request is made for his services by a second physician, or group of physicians, and that service to be again as consultant. Certainly, we practise medicine for a livelihood, but loyalty and kindness would not permit a few dollars to inveigle us into forcing the physician of a family to think we were guilty of some irregularity.

The condition of a patient should not be discussed with the patient or family, by the consultant, in absence of the doctor in charge. That is a breeder of disloyalty and evidence of poor judgment, thus offending the doctor on the case, because the patient cannot quote correctly. Hence, offense is given. Better, by far, than to talk too much, say absolutely nothing and advise the patient that his doctor will advance him the knowledge requested. By so doing, there will be no seed sown that might otherwise germinate into the troublesome mal-practice suit.

Criticism of the physician who has requested, or through the patient has requested, a consultant, need not be made. The consultant need not criticize to patient, family, or public, the doctor's treatment, even though it may be faulty by the present day standards. There is no time when criticism or superior intelligence should be indulged, for there have been reported many errors, by many of the profession, of all degrees of enlightenment.

A consultant must be a man of discretion, of tact, of loyalty. He must not forget his place. He has been called on account of either the doctor's or patient's request, because of the opinion that his services would assist, which is very complimentary, indeed. I do not believe in the idea of suggesting to a patient a specialist who is not a specialist just to have a consultant to fill space. This is a waste of the patient's substance and the results are poor to the profession in general.

To be on time, is a courtesy that is due the consultant. It is rather embarrassing, whether the patient is fully informed or not, to go to the bedside without the attending physician. The only time a calling card is permissible, aside from the regular family doctor, is when the physician in charge, or consultant, is late. This may be left with perfect propriety, with the time of consultation noted.

It is certainly courteous and essential that, during the consultant's examination, the physician in charge pay strict attention and not undertake to entertain the children, examine paintings, or carry on some business orgy.

Finally, if services as a consultant come to any of you, through a physician licensed by the state, go. Do the very best that is in you, whether assistance is for aid or for moral support. Be loyal, be honest, be worthy.

ETHICAL RELATIONS AMONG DOCTORS

M. I. LEFF, M. D.
Glendale, Arizona

(Read before the Maricopa County Medical Society, in Phoenix, Jan. 12, 1931.)

The nine sections of Article IV, Chapter II, and several sections scattered throughout the rest of the Medical Code of the American Medical Association, deal with ethics amongst doctors themselves. The rules of conduct laid down in those sections are fair and self-evident. They can all be summed up in the good old Golden Rule. There is no need to enlarge upon details. No one deserving the name "gentleman", will slander a fellow-man, even if he happens to be a doctor: nor, will he stoop to entice a patient away from another doctor by methods crude or subtle. A decent doctor will not only not criticize another doctor behind his back, but he will go out of his way to defend him against unfair criticism on the part of others. On the other hand, he will not hesitate to tell the doctor to his face what he thinks of him. We should not abstain from giving a fellow-doctor a piece of our mind when he deserves it, for fear of hurting his feelings. None of us is infallible, and we all blunder occasionally. We are doing the erring doctor a real service by pointing out his mistake to him. This gives him a chance to correct his error as far as possible, and to avoid repeating it in the future. Any intelligent man welcomes constructive criticism, and doctors are presumably intelligent.

This kind of frank criticism should also embrace scientific papers. It is obvious that the writer of a paper thinks well of his effort even if his listeners are bored. No good purpose is served, then, by telling him in the conventional fashion that his paper was wonderful and that he is to be congratulated, when, as a matter of fact, his stuff deserves to be thrown into the wastebasket. How much more good would it do the author to listen to the truth? By having the weak parts pointed out to him, he may try a little harder in his next attempt and perhaps succeed in producing something really worth while. Similarly, when a hospital case is discussed at a staff meeting, instead of giving the chart-number, which does not mean anything, the name of the attending doctor should be clearly stated. If the doctor handled the case properly, let him be given the credit due him. In our daily labors we are the objects of gratuitous knocks so often that a little well-deserved praise now and than acts as a bracer to the tired nerves. Should the record show that the attending doctor bungled, the rest of the staff ought to know that too. In the first place, this inside publicity is practically the only means we have to size up the ability and diligence of the various members of the staff. This information would enable us to choose more intelligently when we are in need of a consultant or special help. In the second place, it would do many of us good to know that our mistakes would not be covered up with the dead patient. Strange as it may sound, even doctors are only human beings and, hence, subject to some of the weaknesses of ordinary mortals. One of these widespread failings is inertia, or, in plain English, laziness. With the exception of the few supermen among us, we are not doing our best all the time. But any doctor will surely exert himself to the limit of his ability if he knows that a slipshod diagnosis or carelessness in the management of his case may expose him to the merited criticism of his fellow-practitioners.

Another important, but sadly neglected, ethical precept is the adherence to a minimum fee-schedule. A doctor is, of course, at liberty to value his services as high as he pleases. But no self-respecting member of the profession may charge less than the lo-

cally accepted minimum. A fee-cutting doctor shows less social sense than a bricklayer. He cheapens himself, he hurts the profession, and he cannot afford to give adequate service to his patients.

But the subject which causes most of the bad feeling prevailing among the members of the medical fraternity, is the utter disregard for elementary forms of decency in the matter of patient-stealing. Yes, we might as well brand it with its ugly but quite correct name, stealing! The rule against this disgraceful practice, for those who must have rules, is stated in the Code very explicitly. Section 3 of Article IV of Chapter 2, reads, "A physician should never take charge of or prescribe for a patient who is under the care of another physician, except in an emergency, until after the other physician has relinquished the case or has been properly dismissed." No one can mistake the meaning of this axiom of professional conduct.

But of what earthly good are rules, anyway, if they are not being enforced? Let us be perfectly frank and admit that our much-advertised medical ethics is a myth. The average doctor is not any more ethical than the average business man. Maybe, in this age of go-getting and insane competition, it is too much to expect of a doctor that he adhere strictly to rules of conduct which have come down to us from a less practical age. If that be the case, then let us tear up our ethical codes and stop pretending. If, however, we insist upon the claim that the practice of medicine belongs to a higher realm than the selling of real estate, then let us have the courage and consistency to dissociate ourselves from those among us who, by their unscrupulous conduct, are turning our high-sounding protestations into a huge joke. No one is compelled to belong to our society. If any business-man-doctor finds that to follow medical ethics does not pay, let him, at least, be man enough to step out. But as long as he retains his membership in this organization, he must play the game according to the rules. And it is up to the decent members of the profession to see to it that every doctor either conducts himself ethically or leaves the Society.

OSTEOMYELITIS

J. L. BORAH, D. D. S.
Phoenix, Arizona

Osteomyelitis is inflammation of the bone and its marrow. Osteomyelitis of the jaw implies the presence of marrow in the mandible. The marrow is not in one mass surrounded by compact bone, however, as in long bone, but is broken to bits distributed here and there in small cavities through the bone. Were it not for the presence of marrow in the mandible, the term osteitis would be the correct term to use. Bone is connective tissue impregnated with lime salts, chiefly calcium phosphates. This compact frame-support tissue has channels known as the Haversian canals, from which radiate smaller spaces known as canaliculi. Bone is of two general types, known as spongy, or cancellous, and dense, or compact. In the spongy bone, the canals and canaliculi are relatively large and the bony substance is reduced to slender spiculae and bars. Dense bone is also porous, but all the channels are narrow and, hence, there is a greater proportion of calcified tissue than in the spongy bone. The blood circulation of the bone is through the Haversian canals and canaliculi.

Inflammation of bone occurs and exhibits the same phenomena as in any other tissue. In any inflammatory process, there is an engorgement of blood vessels and lymphatics and a deposition of leukocytes, lymphocytes and other protective cells. In soft structures, there is ready expansion of the tissue to accommodate the invasion of cells and the dilation of the blood vessels. In bone, the canals and canaliculi are the blood spaces and when these become invaded with leukocytes and other inflammatory cells, there is a blocking of the passages and a shutting off of the blood supply to the bone. In any tissue deprived of its blood supply, necrosis results. The leukocytes and perhaps other tissues disintegrate, setting free enzymes and ferments which produce autolysis, or softening, of the part shut off from the blood supply. This occurs in bone the same as in any other tissue and, because of the ungiving qualities of bone, the blood spaces become readily blocked and small areas of necrosis or osteomyelitis are thus induced; the resulting changes are ordinarily spoken of as absorption, rarefaction, or osteoporosis of bone.

It seems to me that, in small infected areas where osteoporosis has developed, there must be sufficient bringing in, from healthy tissues, of oxygen and other nutritive elements and a taking up of waste material by the adjoining lymph spaces to keep the affected areas in a quiescent or a semi-quiescent state. Bony tissue has one characteristic not manifested by most other tissues, in that it may deposit new bone in or about the affected area and produce a condensation of bone, or sclerosis. The sclerosis is most apt to result in chronic infections other than tuberculosis.

The organisms most commonly responsible for ordinary osteomyelitis are staphylococci,

streptococci, pneumococci, and colon bacilli. Mead says that tuberculosis and syphilis interfere with the nourishment of bone and give opportunity for an invasion by pyogenic bacteria.

The inflammatory process in the jaw may be localized or diffuse, and acute, subacute, or chronic. The diffuse process differs from the localized only in that the etiologic factors or the structures of the bone produce or admit of easy dissemination.

The ordinary causes of osteomyelitis of the jaw are trauma—such as extraction of teeth, introduction of local anesthetics, compound fractures of the jaw—blood and lymph stream infection, and infection from adjoining structures. Heavy metals, such as mercury and phosphates, and other poisoning, such as cocaine, may be responsible for osteomyelitis of the jaws. The most common cause of osteomyelitis of the mandible and maxilla are processes connected with the teeth—pulpless teeth probably more than any other—pyorrhea, and hence osteomyelitis of the jaws is usually of interest to the dentist.

The symptoms of acute osteomyelitis are sudden onset, usually with chill, temperature from 102° to 104°, excruciating pain, rapid pulse, swelling, dry coated tongue, increased leukocytosis of the blood, enlarged lymph nodes, pus within a few days, and loose teeth in the infected areas. The pain, at first localized, becomes general throughout the jaw. The pus burrows through the tissues and points at the area where it encounters the least resistance to the surface. The mandible, being of more dense bone than the maxilla, suffers more from osteomyelitis than the maxilla. The cancellous formation of the maxilla favors drainage and, therefore, recovery. In the event of comminuted fracture of the bone, the pus and other exudates surround the fragments and loosen them, making sequestra. Spontaneous fractures may result from the osteomyelitic processes, because of the weakened bone.

The symptoms of chronic osteomyelitis are primarily the systemic effects and the bone changes, either rarefaction or sclerosis. Rarefaction or sclerosis may go on in the contiguous areas, giving a moth-eaten appearance of the bone.

In the diagnosis of osteomyelitis, the x-ray has become a most helpful adjunct; in fact, it is almost necessary. It should be remembered, however, that in the early period of osteomyelitis, before bone destruction has actually taken place, the roentgenogram may give only negative results. As the infection increases and rarefaction of the bone results, the roentgenogram will show the process. In advanced osteomyelitis, the roentgenogram shows both the osteoporotic and the sclerotic changes and the sequestra. It is important that the extent of the osteomyelitis be ascertained so that adequate treatment may be given.

The treatment consists in assisting nature to obtain proper drainage, as early as possible and with the least destruction of tissues. The cosmetic effects are to be thought of, but they are secondary to the control of the infection.

In the acute process, usually no effort is made to remove roots, loose teeth, or sequestra. When the acute stage has passed, the removal of loose teeth, roots, and sequestra, and the introduction of anesthetic, must be done most carefully; the needle must not be passed through affected areas to healthy tissues. I advise nitrous-oxide-oxygen anesthesia, whenever satisfactory local anesthetic cannot be given without danger of spreading the infection. Schaefer, Blair, Mead, and other authorities, emphasize the importance of conservative treatment—giving nature a time to form the sequestra and limit the infective process before extensive or radical surgical measures are undertaken. Loeb calls attention to the importance of conservative treatment of osteomyelitic processes in the child, in order not to destroy unnecessarily tooth buds for the permanent teeth. Before this warning, surgeons were often curetting out potential teeth with necrotic tissue. In the adult the curet may be safely used to remove necrotic areas, but with care not to go deeper than the necrotic tissues. Antiseptics are of less value in bone infection than even in soft tissues. Mead recommends the packing of the necrotic area in which there is osteomyelitis with iodoform gauze, changed at least twice a day, or the insertion of a rubber draining tube, and irrigation with chlorazene or normal saline solution. In pathologic fracture, the gauze is more to be recommended than the tube. Attention should be given to the diet and to the proper use of sedatives to allay pain. The use of the ice bag and heat, especially the alternating of them, is often of great benefit.

It may be necessary occasionally to remove teeth during the acute stages, but this should be done with the greatest of caution. The recent advances in medicine, in which even minute foci of infection are found to be important causes of systemic disease, should awaken the dentists to early recognition of foci of osteomyelitis about teeth.

There is a growing importance of Vincent's angina infection as the cause of a variety of pathologic conditions in the body. The den-

tists should recognize this in the treatment of osteomyelitic processes of the jaws, even when doing simple extractions for apical abscesses and severe pyorrheal conditions.

SUMMARY

Osteomyelitis of the jaw is common. It is more often chronic than acute. It may be responsible for serious systemic processes. Conservative treatment should ever be the rule. Early drainage is always indicated in acute processes. Extraction, curettement, and removal of sequestra, should be delayed until the acute stage has subsided. The Vincent's angina should be recognized as playing a possibly extensive, though as yet largely unknown, part in many serious processes. The inflammation of bone is not unlike inflammation elsewhere, and the same laws as in treatment of infection of soft parts, should govern in the treatment of osteomyelitis.

PUBLIC HEALTH LABORATORY SERVICE*

M. GREENFIELD,
Chief of Laboratory
Santa Fe, N. M.

(*Read before the annual meeting of the New Mexico Public Health Association at Santa Fe, May 11-13, 1931.)

I might speak about packing specimens and point out errors that could be avoided but to say too much on this is like scolding a boy who has fallen from a tree and broken an arm. He receives enough punishment as it is, without any additional admonition. Besides, the careless ones are usually the ones who do not attend such meetings as this. I cannot resist, however, saying a little about sending stool specimens for release from typhoid quarantine and for certification of food handlers. In most cases, poorly taken and packed specimens give you simply a "no" report, but lack of care in preparing a stool specimen will often give a false negative report which might lead to grave error. There is much discussion about our stool specimens. It is true, to be of 100 per cent efficiency these specimens should be in the laboratory a few hours after being passed by the patient. Since this is impossible we have tried our best to prevent as many errors as possible by preparing glycerine brilliant green solution for shipping, and giving directions about the amount of specimen to send. It is when these directions have been neglected by the one preparing the specimen that a part of our false negatives occur. It is a lot of bother, I know, to collect specimens from typhoid cases before release, for it often is a long-drawn-out period and it is hard to carry the interest of the case and contacts. We have recently had a case in the laboratory that renews our interest in these typhoid releases and makes us realize that more, and not less, diligence should be exercised. A doctor brought a specimen of blood to the laboratory from a young woman who had been ill about ten days, exhibiting no other symptom than exceedingly high fever. He asked for a Widal, which proved to be positive for typhoid. In telling of the case, he stated that the young woman had been keeping company with a young man who had had typhoid during the outbreak of typhoid in McNary, Arizona. I think this outbreak was almost three years ago. In determining the source of the infection of the young woman, the health department collected stool specimens of some of the contacts, including a specimen from the young man having a history of typhoid in Arizona three years ago. Typhoid organisms were isolated from the latter specimen only. One wonders how many people had contracted typhoid from this carrier before this case of the young woman. Such an incident makes us realize that, although taking these stool releases is tiresome, it nevertheless is very much worth while in the long run.

While we are thinking of typhoid, I should like again to urge the doctors and health officers to send wet blood specimens whenever possible for their Widal tests. When we have as much as 4 or 5 cc. of blood, we can give you much better and more accurate information than we can with only the dry drop of blood. With that kind of a specimen, we give you a determination on Para A and B as well as typhoid and also on undulant fever. Last summer we had one small area where Para B infections were the rule, and the wet specimens were a great help in making a better diagnosis. Undulant fever is in the state and must be recognized as a definite health problem. It would only be repeating what you have all read and heard to dwell on the subject at great length. I am sure you read the article in one of the recent numbers of the Journal of the American Medical Association relating the isolation of Bacterium meletensis abortus from human placenta and fetus. No doubt a number of the typhoid-like febrile cases are undulant fever, and no doubt a number of abortions can be traced to the same. The laboratory makes it a practice to set up an undulant fever titration on specimens sent in for Wassermann which give a case history of frequent abortions. Such titrations are set up only if such specimens are negative Wassermann. In a number of cases we have had undulant fever titrations sufficiently high to warrant the probable diagnosis of undulant fever.

I wish the doctors would feel a little more free to send blood cultures to the laboratory. We send out sets for blood-culture work. One jar contains a bile-broth mixture, for we find that this medium gives quickest and best results for typhoid; the other jar contains a plain veal broth, for such things as pneumococcus and streptococcus do not grow on the bile broth. For typhoid suspects, this culture should be taken before the twelfth day.

Doctor Earp has arranged with Dr. R. R. Parker, U. S. Public Health Service, Hamilton, Montana, to furnish the state with vaccine to prevent Rocky Mountain spotted fever. We carry in our ice box sufficient material to vaccinate five individuals, and can get more as it is needed. I have a few forms explaining the use of the material. They advocate that an individual exposed to the bites of ticks in an area where Rocky Mountain fever is prevalent, should take these treatments in the early spring before ticks appear. The material is sent out by the U. S. Public Health Service free of charge, and anyone in infected areas is urged to make use of it. I think we have had cases reported only from Rio Arriba County.

The laboratory is isolated and we work in the dark more than any other department. Often we could be of more help if we knew more of the situation. Take us into your confidence and we can be of more service. Several years ago, a doctor from one of the western counties was brought to the laboratory by a mutual friend. After looking at everything and asking a lot of constructive questions, he remarked, "I am glad that I came here. I have sent a few specimens to this place but paid little attention to the reports, for I really thought it was just another institution to give someone a job and that the determinations were made somewhat as we determined who was 'it' in our childhood games by saying Enie, menie, mo". I am glad to say that this doctor has sent specimens more or less regularly for four years now.

The Bureau of Public Health is generous in giving us our share of the appropriation and no doubt at times with a measure of hesitancy for we are isolated from them also and it is hard for them to see our real needs. They can see that their force is rushed and do what they can to better conditions. It is hard for them to visualize our conditions for they do not see our hectic days and over crowded conditions. Some days and even months are very light, while others are all too heavy but this cannot be regulated, since specimens must be reported out at the earliest possible moment and cannot be left until a more opportune time. For that reason, the laboratory force should be sufficiently large to stand a stress. Ours is not and sometime we might not be able to take the stress. A break will come and you will suffer as well as we. I do not like my force to work too long hours, especially for more than a day or two at a time, for the human element of fatigue will become apparent and the work will not be of the best quality. For all these reasons, the laboratory must have substantial financial aid soon or we shall be forced to say that some determinations cannot be made. I am saying this not as a bluff nor a threat, but simply as a statement of facts.

ROTARY AND THE CRIPPLED CHILD

J. M. GREER, M. D.
Phoenix, Arizona

(Read before the Rotary Club of Phoenix.)

The first thing you might ask me is, "What is a crippled child"? A crippled child may be defined as one whose movements are so restricted by accident or disease as to affect his capacity for self support. Also, "Why do we talk about Rotary and the crippled child"? One reason is that the International Society for Crippled Children, which is bringing light to thousands of homes, is Rotarian in its origin and Edgar F. Allen is its beloved "Daddy". Also, hundreds of Rotary Clubs have interested themselves in the work of discovering the neglected crippled children of their communities and have aided and are aiding in giving them care and attention which will improve their unfortunate condition. Each Rotary Club must determine for itself what community service activity it desires to undertake. As you know, it is a general Rotary policy that a Rotary club should assume responsibility for a community service activity only in the event that no organization exists, or can be caused to exist, for such activity.

In Arizona, as is true in many other states, we have a State Society for Crippled Children, which is a component part of the International Society for Crippled Children. Therefore, it is the function of Rotary in Arizona and the Forty Third District, through its various clubs, to assist this organization in its work. This assistance can be given both as clubs through their respective committees on crippled children and also as individual Rotarians.

Perhaps a bit of history of Rotary, with respect to its work on behalf of the underprivileged child, would be of interest to the members of this conference. Probably the first Rotary Club to interest itself in the condition of neglected crippled children in

its community, was the Rotary Club of Syracuse, N. Y., in 1913. In 1916 the Rotary Club of Toledo, Ohio, gave aid to neglected crippled children of that city and later to those throughout the State of Ohio with the cooperation of other Rotary Clubs of the State. From this work grew up the Ohio State Society for Crippled Children and later similar societies in other states of the United States and in the provinces of Canada. Finally, the International Society for Crippled Children developed. Membership in these organizations is largely held by Rotarians.

In 1920, the members of the Order of the Mystic Shrine entered upon a program of building hospitals for crippled children as a war memorial, or, rather, as a peace memorial for friendless, orphaned, and crippled children.

In 1922, Convention of Rotary International adopted the following resolution:

"Whereas Rotarians have evinced an interest in crippled children and have expressed a desire to assist in bringing to crippled children physical corrections, surgical relief, and education, in cases where such treatment will be of benefit,

"Now, Therefore, Be It Resolved that the 13th Annual Convention of Rotary International commends this humanitarian activity on the part of the Rotary Clubs so engaged and directs thereto the attention of the delegates present at this convention, that their own clubs may take cognizance of the movement as offering an opportunity for service in their respective communities."

Work for crippled children may be divided into four phases:

(1) Survey, or the finding of the cripple.

(2) Diagnosis, the determining of the condition and the estimation of what will be required to correct it in so far as possible.

(3) Treatment, education, and training of the crippled.

(4) Finding of employment for the cripple after he has been treated, educated, and trained.

Inasmuch as the Arizona Society for Crippled Children is the organization that we as Rotarians are to assist in this work, it may be presumed that information concerning this Society will be of interest to all of us.

Realizing that there was a great need in the state for an organization to coordinate the agencies already doing a wonderful work for the crippled child in Arizona, and to extend that assistance of coordination to those not yet reached, as well as to work out a definite program, the Rotary Club of one of our towns started a preliminary survey. (A survey had previously been made by the Shrine and some very valuable data obtained.) This survey was carried on through the Boys' Work Committees of the Rotary Clubs throughout the state, with the help of other organizations and individuals. It was of necessity a limited piece of work. However, it showed very clearly that any undertaking of this kind would be too large a program for any private organization to attempt. From this movement the idea of an Arizona Society for Crippled Children was created, with formal organization in October, 1929. Learning of this move, the International Society for Crippled Children presented the Arizona Society with a membership in its organization, giving to it the advantages of the International Society's experience and the findings of its research departments. The aim, or rather, I should say, the first aim of the Society was to create enough interest among the people of Arizona to make possible a complete state program.

Logically, the first thing to do seemed to be to make a survey of all the agencies existing in the state which are doing work pertaining to child welfare; to determine how many children are reached, by what methods, at what cost, and to find out what our hospitals, institutional and school facilities are, for the treatment and education of this group of children. This information was to be studied and analyzed and conferences held with community leaders with the hope of working out a solution to these problems in our state. At the same time, with the assistance of local committees and organization and workers already in the field, it was the aim to concentrate efforts to obtain actual knowledge of every crippled child in the state.

Therefore, the Arizona Society for Crippled Children was organized in October, 1929, and a survey was begun in January, 1930, and completed in June of that year. In making this survey, information was obtained from the Shrine survey that was made in 1926 and the survey made the year before by the Boys' Work Committee of the Rotary Clubs and used as a basis of this survey. A very interesting thing was found and that was that many of the children found in the previous surveys could not be located. This indicated our transient population and the need for a continuous survey.

The families of 700 children were visited and in this survey data such as the following were obtained, if possible: (1) The cause of the crippled condition; (2) the medical care to date; (3) care available at the present time; (4) the future needs of the child. The object of this was to organize the work of the Society in such a way that the crippled children could be cared for in the most

efficient manner, working with the other organizations.

One of the outstanding things that this survey showed, among other things, was the great need for braces and brace-shop service. Efforts were directed toward the establishment of such a service. A revolving brace loan fund was started by the Rotary Clubs throughout the state and a shop known as the Arizona Brace Shop was established in Arizona and is now in operation. There is also a fund raised by the Shrine for the purpose of paying transportation of children to and from Shrine Hospitals and a limited care while waiting. These funds are entirely inadequate.

The question may be asked by some of you, "Is not the work of the Arizona Society and the Shrine and perhaps some of our other organizations, a duplication?" The answer to this is: Not at all, because those eligible to treatment in Shrine Hospitals are limited by qualifications and markedly limited because of the large waiting list. It now takes about eighteen months before a child can be taken to one of the Shrine Hospitals, because of the large demand for such treatment. One can readily see that valuable opportunities are lost for doing the greatest good to the child if nothing is done during this waiting time.

Under the Arizona Society, diagnostic clinics have already been held in Globe, Miami, Tucson, and Phoenix. At these clinics, in addition to the examination of the child and the recommendation for his care and treatment, other things are accomplished, such as the development of the proper attitude toward the afflicted child on the part of the parents and the community, the arousing of the public conscience to its duty toward such children, the education of the community regarding the causes of sickness and deformities and the possibilities of preventing them.

You are, no doubt, saying to yourself by this time, "Well, all this is very interesting, but where do I come in? I am neither a doctor, a social service worker, a brace maker nor a hospital superintendent, nor an educator; I am just a business man." If you will follow me for a few minutes, I believe that I can explain to you where you come in. First and foremost, we must realize that the problem of the cripple is a community problem. It is the problem of the citizenship of the state and, therefore, the problem of each individual citizen. It seems to me that it is not enough to lend our financial aid, although that is badly needed, but we must do more than that.

The problem of finding the cripple is not always easy. There is a great tendency to hide away the cripple. This is sometimes done by the individual himself and sometimes by the parents. Recently, we found a little girl that had been in hiding. She was found accidentally by a school nurse. She could not walk and never had walked, although she was eight years old. She skidded along the floor on her hips. This nurse happened to step in one day on another mission and saw this child skidding along the floor to hide behind a door. She is now in a hospital under treatment. Another case was slipped into my office one day by a sister, the crippled child in a laundry basket. This case was lost track of and so far has not been found. Another case was cited where a mother denied her crippled child and it was only found by the postman, who accidentally came around to the back door one day with a special delivery letter. The mother still denied it when social service workers came to inquire. Such an attitude must be overcome and each and every one of us can help to overcome it. In the words of John Culbert Farries, Director for the Institute for Crippled Children, in a recent article in the "Rotarian": "Some people shy at the cripple like a skittish colt at a wind-tossed paper whirling down the roadside and with about as much reason." The fact of the cripple is obvious everywhere; we must face this fact and not shy from it. We must say, as business men: "Here is a problem. I am willing to inform myself concerning it and am ready to help solve it." By assuming such an attitude we shall soon overcome such prejudices as those mentioned above, and efforts at concealment on the part of the cripple and his parents will no longer be a stumbling block in the handling of this work.

Again, we must remember that the earlier we can get the cripple. the more we can do for him. The care and treatment of the cripple is a long-drawn-out affair. We are at times apt to allow our enthusiasm to get away with us and, during the presentation or the relating of a pitiful case, we may jump up and say. "Gee, that is a terrible case; fellows, we have got to do something about it. Let us take up a collection and send him into the hospital and pay for his hospital and operation." This is all very well, but, in the the first place, this would only be a very little in the solution of the problem. The paying of the hospital would help of course, if it were a hospital case. The paying for the operation would not be allowed by any surgeon, for no surgeon would accept money on such basis, so that is not needed. The thing we must remember is that the problem of the cripple should be solved by a definitely

outlined plan and all of the phases of the problem must be taken care of, or it is not a solution. His body must be mended of course, but, at the same time, his mind must be treated. He must be taught. He is discouraged and the "dis" must be removed from this discouragement as well as the "dis" from his physical disability. He must be educated. He must be trained to do something, and, lastly, and this sometimes seems the hardest, he must be employed at some gainful occupation where he can be self supporting and thus gain and maintain his self respect. He must be taught and made to know and feel that there is a place for him in the world and that he is needed to fill that place. He must not, by any means, be treated as an object of pity.

In closing this brief talk, which has only skimmed the surface, I should like to have you remember the various phases of this work, and remember that they are all important and all necessary in the solution of the problem of the cripple:

First: The finding of the cripple.

Second: The care, treatment and education of the cripple.

Third: The training of the cripple to do something useful. The instilling into his mind the thought that there is a place for him and that he can be useful, earn his living, maintain his self respect and be of value to society.

Fourth: The finding of employment for this cripple and the education of the public in such a way that it will not shy at his presence.

Finally, let me quote again from John Faries: "As key men in every community we have the power to mould public sentiment in behalf of the cripple. We can call a halt to the terrible waste in man power through the non-employment of the cripple in positions in which he can render efficient service. As employers of labor, we can prove for ourselves the truth of the indisputable fact that the cripple makes a good employee. The cripple can be placed in an orderly cosmos, and he will no longer be a waste scrap of humanity blown into a forgotten corner by the wind of adversity".

CASE REPORT

S. D. SWOPE, M. D.
El Paso, Texas

(Presented before the El Paso County Medical Society, September 14, 1931.)

J. N. G., male, Mexican, 42, single, printer.

Family history unimportant.

Present complaint: Complains of inability to walk; weakness of legs. Vision diminished in left eye, imperfect hearing in right ear.

Past history: Perfectly healthy until twelve months ago when he developed a severe frontal lobe headache, this headache persisted for six months.

Present illness: About nine months ago he had a disagreement with his co-worker, which upset him very much. Three days after this occurrence, he was taken sick while at work. Had to go home; arriving at home he had a convulsive attack. Was unconscious four hours. When he regained consciousness he could not get up or walk. He noted that his hearing on the right side was imperfect and that his left eye persistently turned to the right side. Remained in bed for three months, when he had dizzy spells followed by vomiting. When these spells were severe, he would fall, and usually to the right side. On several occasions he had these spells while out on the street. At the beginning of his present illness, he complained of a stiff neck and of a heavy pain in the back of his head. Since the above he has been unable to follow his occupation and thinks that his condition has grown progressively worse. He has more difficulty in getting about at night than in the day-time.

Physical examination: Walks with feet wide apart. Romberg negative. Protrudes tongue to the right. Sense of taste absent in the right side of his tongue and right buccal cavity. Left normal. Rhythmic twitching of the right lower lid and right side of face. Stands in a fixed position, with head and neck fixed, usually leaning toward the right. Lateral nystagmus in both eyes. No perpendicular nystagmus. The lateral nystagmus is not constant, but, whenever the eyes are moved to the right or left, the oscillation of the eyeballs takes place. Finger and nose pointing practically normal. Weakness of right leg more apparent than left. Difficulty in walking backward, usually bowing head to the right side. Patella reflexes exaggerated. Ankle clonus positive on right side. Babinsky normal. Abdominal and cremasteric reflexes apparently absent. Hand grip stronger on the left. Rapid rotation causes him to feel as if he were in an aeroplane. Sensation over entire right side of body diminished; very noticeably diminished on the right side of the face and plantar surface of the right foot. No difficulty upon swallowing. Has had his leukoderma (vitiligo) fifteen years, on hands, both elbows, back of the neck and shoulders, feet, blotches on legs, glans penis. Blood pressure is 120/80. Cerebral pressure has not been taken. Wassermann spinal fluid and blood negative.

Conclusions: I think this is a tumor of the cerebellopontine area, right side, with sufficient pressure to influence all the intracranial nerves except, possibly, the second.

The rapid onset and the slow progress, or want of further development, would indicate a hematoma or angiohematoma.

Dr. W. E. Vandevere very kindly examined this man's eyes and ears and he will make a report on his findings. Dr. W. W. Waite kindly made x-rays of his head, which he will describe.

DISCUSSION

DR. W. E. VANDEVERE: I made an audiogram of this man. Right auditory function is markedly impaired, with only an island of hearing for the tones 512, 1028 and 2048 double vibrations per second. In left ear function is makedly impaired in the high notes of 2048, 4096 and 8192, showing a nerve disturbance of the left auditory nerve also. There is a marked bilateral nystagmus on looking to the right. Twitching of right lower lid, and mucles of right side of face. Tongue slightly protrudes to the right and muscles of the tongue twitch. Sensation over right cheek impaired. Sensation of taste, especially on the right side, absent. Not much disturbed on the left. Eyegrounds appeared normal.

There seems to be a disturbance of the 5th, 7th, 8th, 9th and 12th nerves on the right side, with some slight involvement of the left auditory nerve. The disturbance would appear to be near the origin of these nerves in the vicinity of the 4th ventricle in the region of the cerebello-pontile area.

DR. SWOPE: His sense of smell is decidedly impaired. Dr. Waite made some stereographs of the head, which he will pass around.

DR. W. W. WAITE passed around stereographs. Lateral view proved normal. Septum is pushed somewhat over to the left; looks as though the ventricles are fairly well outlined. Right ventricle seems to be pushed up and away from the center. The septum being pushed over to the left would show the growth to be on the right side. Practically all intracranial nerves have their origin on the floor of the 4th ventricle. As far as we can tell this looks as if it might be a growth that was pushing around the 4th ventricle and was involving those nerves. It is evidently pushed over a bit to the left, with some few symptoms of disturbance on the other side.

DR. SWOPE: In Saxe's new book. 1931 publication, he describes a great many of these cases and the operations which he has done on them. Some cases he has operated several times. The book is very interesting and the cases which he reports have been handled very satisfactorily.

DR. B. F. STEVENS: The chances are this is due to syphilis. In this type of people nine out of ten are syphilitic.

DR. SWOPE: I do not think nationality has much to do with this case. The spinal fluid and blood Wassermann were negative and there are no evidences of his having syphilis, with absolutely no history of syphilis. I do not think there is any suggestion of syphilis in this instance.

DR. L. M. SMITH: While the man's nationality may be against him, even if he had syphilis I do not think you could count on that being the cause of the mental disorder. Wtih the symptoms he has, and with as much involvement as there seems to be, if there were syphilis, it ought to show in his spinal fluid.

DR. MOTT RAWLINGS: This man's case fits in very closely with tumors of the cerebellopontile area, perhaps an angioma—a tumor arising from the dura or covering of the brain. Most of these tumors of the cerebral angle arise from the exodic nerve. This man has practically no hearing on the right side and that would seem to me good evidence that he has an angioma.

ELECTROCAUTERY IN TUBERCULOSIS OF THE LARYNX

D. R. GASKINS, M. D.
Phoenix, Ariona

(Discussion of paper on this subject by Dr. W. E. Vandevere, published last month. This discussion omitted in error.

DR. D. R. GASKINS, Phoenix: There is no condition in medical science for which the treatment has been developed by trial and error as in tuberculous laryngitis. There is hardly a drug in the pharmacopeia, or hardly a surgical principle, that has not been used and advocated with more or less enthusiasm for the treatment of this condition. The fact that this condition has been recognized almost as far back as medical history dates, the fact that practically every thing has been tried from time to time, and the fact that many of the patients get well with treatment, many without treatment, and many in spite of treatment, bring us face to face with the realization that it is not so much what we do in the treatment of this condition, but the possession of that rare surgical judgment of what not to do and when not to do it.

Dr. Hajek, lecturing before the University of London, sounded the keynote governing the principles of the treatment of this condition, and at the same time coined an expression which I am sure has made a very grave impression on many laryngologists. He said, "The older amongst you will remember, as I do, the time when curettage of tuberculosis of the larynx was introduced by Heryng and Krause and was adopted by many laryngologists, who practised without any regard for the general condition of the patient. All of us, with few exceptions, took some part in this line of treatment. I well remember demonstrating in my clinic the healed scars on the interarytenoid mucous membrane of a female patient, age 24 years, whom I had curetted. The enthusiasm over the case gave way after a few days to general feeling of disenchantment, when we were informed that she had died of systemic tuberculosis. At that time I coined the expression, 'The larynx healed, the patient killed.'"

It is not my intention to bore you with a review of the literature covering the many procedures and drugs that have been used in the treatment of tuberculous laryngitis, for that subject is not under discussion. The subject for discussion here is electro-cauterization. With the exception of voice-rest and different modifications of sun-light therapy, the only procedure that has stood the test of time is actual cautery. We have no other procedure at our disposal that is so efficient for the relief of pain, which compares with the cautery when used with discrimination. Cauterization is not a wholesale procedure in which an attempt is made to remove or destroy all of the tuberculous tissue, but rather do we attempt to stimulate a reaction with the formation of granulation tissue, which is necessary for the sloughing off of the heat-destroyed area. The development of this granulation tissue is attended by the formation of new blood vessels which grow from the periphery through the previously avascular tubercle. This brings nutrition to the fixed connective-tissue elements, enabling them to withstand the action of the tubercle toxin, and probably also causing the epithelioid cells themselves to develop into fibroblasts. To repeat, then, the object of the cauterization is not so much the destruction of diseased tissue as it is the healing of the tubercle, and, because of the limited trauma necessary, important organs are not removed or destroyed except by the disease itself. With the possible exception of very large tuberculomata and completely diseased epiglottides, all the clinical types of localized tuberculous lesions are more successfully combated by the cautery than by any other form of treatment.

In the last few years, quartz light therapy and chaulmoogra oil have come into favor in the treatment of this condition. I have been very much disappointed in the domestic water-cooled quartz light and have been trying to get some information on the light developed by Wessley, of Vienna; but there are only a few of these lamps in this country and their expense makes them almost prohibitive.

I have had some very good results from local instillation of chaulmoogra oil, provided the oil imported from Burma is used.

In closing, I merely wish to stress that while cauterization is one of the most useful procedures that we have, it must be used with discrimination. For, after all, the condition of the larynx is only a barometer pointing a warning finger at the progress or retrogression of the pulmonary lesions.

PUBLIC HEALTH NOTES

J. ROSSLYN EARP, DR. P. H.
Director New Mexico State Bureau of Public Health

WHAT WAS 1931 WORTH?

It is much too soon to give a final judgment on the value of the old year to public health. Those who look for spectacular discoveries are often needlessly disheartened.

> For while the tired waves vainly breaking
> Seem here no painful inch to gain,
> Far back through creeks and inlets making
> Comes, silent, flooding in the main.

One paper of unusual interest published during the year[1] is the outcome of observations made during eight years of routine laboratory examinations for diphtheria. The authors have noticed that diphtheria bacilli can be divided into two classes (and a third intermediate group) each with certain distinctive morphological and cultural characteristics. They have devised a new culture medium the more readily to differentiate the two varieties which they term **B. diphtheria gravis** and **B. diphtheria mitis,** respectively. The former is found to be associated with severely toxic cases of the disease, while the latter, though it produces an abundant membrane, does not give rise to severe toxemia. It seems quite probable that an antitoxin prepared by use of the **mitis** form might not be very efficacious in treating a person infected with the **gravis** form. It may also be found that toxoid for immunization should be prepared from toxin derived from both forms. And, again, it may be proved that this new classification is of less practical significance than its authors now believe it to be.

How much simpler it all was thirty years ago! Then there was one bacterium for one disease and none of these closely related forms that might be highly virulent or slightly virulent or not virulent at all. Yet, patience; these so numerous observations on the interaction of environment and heredity in the bacterial world will some day be classified. The science of bacterial genetics is in its infancy, but one suspects that before it is much older it will propound generalizations of far-reaching significance.

Take, for example, the recent work on rough and smooth colonies[2] and that on granular and possibly filterable forms of the tubercle bacillus[3]. What connection may this have with the diphtheroid and sometimes granular organism characteristically found in the glands in Hodgkin's disease? What secret of liaison lies in the womb of time between the ancestors of the harmless Timothy grass bacillus and the deadly bacillus of Koch?

The specific organism of coccidioidal granuloma when found in animal lesions looks so little like a mound that it was originally classified by Stiles as a protozoan, in 1894. When Doctor Montgomery, of San Francisco, cultivated a mould from these coccidia-like particles, he threw his cultures away, believing them to be contaminated. No one has yet seen the fungus growing in a state of nature, but the distribution of infected animals in the hot dry valleys of Southern California and right up to the bank of the Colorado river, suggests that we have almost as good a chance of finding it in Arizona or New Mexico as they have in California. And in this connection may I very warmly commend the monograph published on this subject by the California Department of Public Health[4]. Of the 286 reported cases of coccidioidal granuloma, two originated in Arizona and one in Texas. So far none has been reported in New Mexico.

New uses are being found for rodents, whose hostages, in hundreds of laboratories for the study of nutrition, have already made some amends to humanity for the depredations of their kind. In the bacteriological laboratories of the University of Illinois, a first cousin of **B. typhosus** has been discovered which infects rats and mice, giving them a disease in all respects similar to human typhoid fever. Already advantage has been taken of this discovery to test relative merits of oral and subcutaneous administration of typhoid vaccine. Both methods gave equally positive and successful results. In July, 1930, Doctor Max Thieler, of Harvard, discovered that white mice are susceptible to yellow fever virus, not through the blood stream, as is the case in man and in certain monkeys, but by intracerebral inoculation. This discovery has been followed up under the auspices of the Rockefeller Foundation, and a test, known as the intraperitoneal protection test in mice, has been devised to estimate the protective value of convalescent human sera against yellow fever virus[5].

An account of this and other research work on yellow fever is to be found in the last annual report of the Rockefeller Foundation[6].

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CINCHOPHEN

More than 36 deaths have been reported due to the toxic effects of cinchophen. "The liver in every case that has been studied at necropsy has shown degenerative changes characteristic of one or more of the phases of acute yellow atrophy". Pearson and Harding—Am. Jour. Med. Sciences, Jan., 1931.

"Indiscriminate use and counter prescribing is dangerous, and the drug or its congeners should not be used in cases difficult of careful control and observation". Meyer A. Rabinowitz, M. D., J. A. M. A., Oct. 25, 1930.

The following preparations contain cinchophen:

Phenyl-cinchoninic acid, atophan, novatophan, atophanyl, diiodo-atophan, biloptin, oxyliodide, quinophan, agotan, neo-cinchophen, phenoquin, leukotropen, atophan-urotropine fantan, iriphan, tolysin, weldona, and farastan, are all congeners of cinchophen. Atoquinol (atochinol) is a derivative of cinchophen. Harrell Rheumatism cure.

Predisposition: Predisposed are those with gallbladder disease, cirrhosis of the liver, pregnancy, chronic alcoholism, chronic nephritis, those who in the past have suffered from liver disease associated with jaundice, and those showing other evidence of cinchophen intolerance. The drug seems particularly dangerous in states of hepatic damage accompanying starvation, malnutrition, cachexia, chronic infection, or tonsillectomy, after fevers, or in conditions which have decreased glycogen content of the liver cells. It has been definitely proved that, under these conditions, there is greater tendency to liver degeneration. (Rabinowitz).

C. E. YOUNT.

MINUTES OF THE SEVENTEENTH ANNUAL SESSION OF THE MEDICAL AND SURGICAL ASSOCIATION OF THE SOUTHWEST

Phoenix, Ariz., December 3 to 5, 1931.

The Seventeenth Annual meeting of the Medical & Surgical Association of the Southwest opened its first session in the convention hall at the Hotel Westward Ho, Phoenix, at 10:05 a. m., Dec. 3, with Dr. W. R. Jamieson, of El Paso, president, in the chair. Bishop Walter Mitchell, who was on the program for the invocation, was unavoidably absent from the city and Dean Lane of Trinity Cathedral functioned in his stead.

The Address of Welcome was given by Hon. Geo. W. P. Hunt, Governor of Arizona, who addressed his remarks to the physicians generally of Western Texas, Arizona, New Mexico and northern Mexico, calling attention to the fact that we live in the healthiest climate in the world, represent a not inconsiderable place in the achievements of medicine in which America has taken a great part. These achievements have resulted in suppressing and extinguishing some of the diseases which have ravaged the world for centuries.

He stated that it was a privilege to come and discuss health matters and to welcome the Association to Arizona. He recalled the fact that owing to the achievements of medicine the span of life has been extended ten years or longer in comparison to what it was fifty years ago. Every one should appreciate this and the Association is to be congratulated for what has been accomplished in this southwest, which has no inconsiderable place in the achievements of American medicine. America has taken a great part in suppressing and extinguishing some of the disease plagues which have ravaged the world for centuries. The governor stated that while serving as minister to Siam, he had opportunity to observe some of the work which American doctors were doing along this line in attempting to eradicate diseases which had been prevalent among those people since Bible times. In the Sandwich Islands there is a colony of lepers where American doctors are working. Hope was expressed that our deliberations would result in great good to the people we serve. Arizona is glad to welcome the Association to our beautiful city and state.

Response to the Address of Welcome was given by Dr. James J. Gorman of El Paso.

The President's Address was delivered by Dr. W. R. Jamieson, the subject of his paper being "Aeronautics and Medicine."

Dr. J. Mott Rawlings of El Paso followed with a paper on "Childhood Tuberculosis."

Dr. Arthur L. Rertzler of Halstead, Kansas then gave an address on "General Principles in the Management of Goitre."

Final paper of the morning program was given by Dr. D. L. Arnold on "Use of Insulin in the Treatment of Anorexia and Malnutrition."

At the Clinical Luncheon impromptu talks were given by Drs. A. L. Hertzler, Alexius Forster, W. A. Gekler, W. R. Jamieson and S. C. Davis.

Scientific Session was resumed at 2 p. m., the first paper being by Dr. W. E. Vandevere of El Paso on "Electrocautery in Tuberculosis of the Larynx."

The second paper of the afternoon was by Dr. Victor Randolph of Phoenix, on "Extrapleural Pneumolysis." A discussion of all the papers on tuberculosis was participated in by Dr. F. C. Jordan of Phoenix, Dr. Fred G. Holmes of Phoenix, Dr. D. R. Gaskins of Phoenix, Dr. W. L. Rogers of San Francisco, with closing discussion by Dr. Victor Randolph.

At the Thursday Evening scientific session, the first presentation was by Dr. A. M. Forster of Colorado Springs, on "Heliotherapy", this being in the form of a moving picture.

Dr. W. A. Gekler of Albuquerque, then presented a paper on "Chemotherapy in Tuberculosis."

Dr. Fred H. Kruse of San Francisco gave the third paper of the evening, on "Jaundice: A Differential Study of the Types and of the Aids in Diagnosis."

At the opening of the Friday a. m. meeting, Dr. Jamieson announced the follwing committees:—Necrology, Drs. Howell Randolph, Ralph Homan and W. A. Gekler; Resolutions, Drs. M. K. Wylder, R. D. Kennedy and Orville Egbert; Place of Meeting, Drs. W. R. Lovelace, C. W. Swackhamer, J. Mott Rawlings.

Scientific session was opened by the paper of Drs. V. G. Presson and R. A. Wilson of Tucson, read by Dr. Presson, on "Intestinal Allergy and the Sequelae."

The second paper in this group was presented by Dr. George Piness of Los Angeles, on "Problems and Management of Intractable Asthma."

Dr. Roy M. Balyeat then gave a discussion of "Allergic Migraine: Its Diagnosis and Treatment."

The three papers on allergic conditions were discussed as a group by Dr. E. W. Phillips of Phoenix, Dr. W. W. Wilkinson of Phoenix, Dr. O. H. Brown of Phoenix, Dr. Christiansen of Globe, with closing discussions by Dr. V. G. Presson, Dr. Piness and Dr. Balyeat.

At the Firday p. m. session, the first paper was by Dr. N. W. Barker of Rochester, Minn., on "Nephrosis." This was discussed by Drs. Paul Holbrook, W. R. Jamueson, Paul Guttman, Frank J. Milloy with closing discussion by Dr. Barker.

Dr. Paul Holbrook of Tucson then presented paper on "Chronic Arthritis." This was discussed by Dr. Ellis Jones, Dr. J. M. Greer, Dr. James Moore, and Dr. Edgar H. Brown.

The general business session of the Association was held immediately following the Friday afternoon scientific session.

The reading of the minutes of previous meeting was dispensed with as they had been published and sent to all members.

The report of the Secretary-Treasurer was presented verbally. This showed a total membership on December first of 285, of whom 70 have not yet paid dues for 1931. We have lost during the year, five members by death, four by virtue of being unable to locate, thirteen by resignation and eleven for non-payment of dues, a total of thirty three.

Although there are slightly fewer members on the roll this year than last year, this is partly due to the fact that no effort whatever was made during the year to add new members. In spite of the loss in membership, the revenue from dues (due to the increase of dues from $3.00 to $5.00) is considerably greater, and has enabled the Association to carry on its work without deficit, and to have a small balance in the treasury.

The report of the Committee on Necrology was presented by Dr. Howell Randolph, chairman, as follows:

(To be published separately)

The Report of the Committee on Resolutions was presented by its chairman, Dr. M. K. Wylder, and adopted.

The report of the Committee on Place of Meeting was to the effect that they recommend the acceptance of the invitation of Albuquerque for the 1932 meeting. This recommendation was unanimously adopted.

At this time the amendment to the constitution proposed at the El Paso meeting was introduced for action, this reading as follows:
INSERT—

After discussion, vote on this amendment was called for and resulted in the adoption of the amendment.

Amendment to Article V, Section 3 of the Constitution:-

"There shall be a president-elect who shall take office at the evening meeting of the first day of the regular annual meeting. The president shall hold office until he delivers his address as retiring president, following which the president-elect shall be inducted into office and deliver the president's address."

As the result of the adoption of this amendment, the office of president of the Association will remain filled by Dr. W. R. Jamieson until the Albuquerque meeting, and the Association was called on to elect a President-Elect, who will take office as president at the 1932 meeting. Dr. F. D. Vickers, of Deming, N. M. wsa placed in nomination and there being no further nominations he was elected by viva voce vote.

Dr. W. A. Gekler of Albuquerque was nominated and elected as first vice-president.

Dr. Orville H. Brown was nominated and elected as second vice-president.

Dr. W. Warner Watkins of Phoenix was nominated and elected as secretary-treasurer.

At the Firday Evening social gathering, following the banquet, Dr. M. K. Wylder of Albuquerque, presented an address on "The Effect of Heredity" Environment and Early Habits in the Development of Personality."

On Saturday forenoon, the scientific session was opened by a paper by Drs. W. L. and C. P. Brown of El Paso, on "Does the Operative Mortality and Sequelae Justify Operation on Borderline Gall Bladder Cases?" The discussion was opened by Dr. C. A. Thomas of Tucson, continued by Drs. J. L. McKnight, W. O. Sweek, W. W. Watkins, O. H. Brown, E. Payne Palmer, and closed by Dr. W. L Brown.

Dr. Norman Bethune then presented an address on "Some Procedures in Thoracic Surgery."

Immediately following the Clinical Luncheon, the discussion of Dr. Bethune's paper was taken up, and following this Dr. W. L. Rogers of San Francisco presented a paper on "The Use of the Kirschner Wire in the Treatment of Fractures."

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Dr. W. S. Sharp of McNary, Arizona., followed with a paper on "Fractures of the Femur." These two papers were discussed by Dr. J. M. Greer.

A telegram from Dr. Kelvin D. Lynch of El Paso, who was on the program for a paper on "Urology in Infancy and Childhood," was read, expressing his regrets that he was detained on account of illness of his wife.

The final paper on the program was by Dr. David M. Davis of Phoenix, on "Diagnosis and Treatment of Carcinoma of the Prostate."

This closed a very excellent program and meeting adjourned sine die.

CLINICAL PROGRAM

The surgical and medical clinics presented by the Maricopa County Medical Society members were not very extensive but were instructive and thoroughly enjoyed by those of the members and guests who attended them.

SURGICAL CLINICS

Dr. Victor Randolph had clinic on lung abscess at St. Joseph's Hospital Friday morning and on extrapleural pneumolysis, intrapleural pneumolysis and phrenicotomy on Saturday morning.

Drs. W. A. Schwartz and B. L. Melton held clinics on tonsillectomies and adenoidectomies Friday morning at St. Joseph's Hospital.

Dr. John J. McLoone had clinics on tonsillectomies at St. Joseph's Hospital Firday morning, and on submucous resection and Caldwell-Luc radical antrum operation Saturday morning at the same hospital.

Dr. J. H. Patterson had clinic on suspension operation and appendectomy Friday morning at St. Joseph's Hospital.

Dr. David M. Davis held clinic on prostatectomy at Good Samaritan Hospital on Friday.

Drs. O. W. Thoeny, Lon A. Browning and James J. Johnson held clinics on tonsil, adenoid and eye muscle operations at the Social Service Center on Friday.

Drs. Joseph M. Greeer and Palmer Dysart held an orthopedic clinic at the Social Service Center on Saturday.

MEDICAL CLINICS

On Friday morning, Dr. Fred G. Holmes held a medical clinic at the Assembly Hall of the Westward Ho on the Treatment of Cavities in Pulmonary Tuberculosis, discussing and illustrating all the old and new methods of eliminating cavities.

On Saturday morning, Dr. Orville H. Brown held a clinic at the Assembly Hall on Treatment of Food Sensitization and Allergy, with special reference to use of digestants and diet regulation.

SOCIAL ENTERTAINMENT

The entertainment of the visiting ladies was in charge of the Ladies' Auxiliary of the Maricopa County Medical Society. There was a progressive bridge party Thursday evening, the groups going from one residence to another of several of the entertaining ladies. A luncheon was held on Friday and the ladies joined the men at the dinner-dance on Friday evening, at the Hotel Westward Ho.

The clinical luncheons each noon were greatly enjoyed, combining a social hour with clinical discussions.

A list of the members of the Association follows, those appearing in bold face type being paid up members for the year 1931.

Adams, C. W., Globe, Arizona
Adamson, E. W., Douglas, Ariz.
Allison, Dwight, El Paso
Armbruster, A. C,. Phoenix
Arnold, D. G., El Paso
Austin, C. P., Lordsburg, N. M.
Macon, John E., Miami, Ariz.
Bailey, H. T., Phoenix
Bakes, E. C., Phoenix
Bannister, K., Phoenix
Barnes, F. M., El Paso
Barrett, F. O., El Paso
Berger, B. M., Phoenix
Bessette, A. E., Albuquerque
Bledsoe, N. C., Tucson, Ariz.
Bloomhardt, S. I., Phoenix
Bouldin, T. J., St. John's, Ariz.
Bradley, R. L., Roswell, N. M.
Brazie, W., Kingman, Ariz.
Brehmer, H. L., Albuquerque
Bridge, G. A., Bisbee
Britton, J. M., El Paso
Britton, W. W., El Paso
Brockway, G. M., Phoenix
Brockway, G. M., Phoenix
Brown, C. P., El Paso
Brown, C. W., Phoenix
Brown, E. H., Phoenix
Brown, O. E., Tucumcari, N. M.
Brown, O. H., Phoenix
Brown, O. S., Winslow, Ariz.
Brown, R. O., Santa Fe
Brown, W. L., El Paso
Browning, L. A., Phoenix
Brunner, Geo., El Paso
Burtch, L. A. W., Phoenix
Butler, P. M., Winkelman, Ariz.
Byrd, E. L., Clint, Texas
Camp, Jim, Pecos, Texas
Carhart, W. G., Whipple, Ariz.

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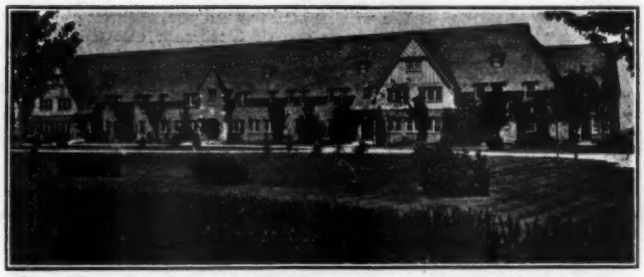

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Christian, P. C., Oklahoma City
Clark, E. B., El Paso
Clohessy, T. T., Phoenix
Clyne, M., Tucson
Cohenour, L. B., Albuquerque
Comer, M. C., Tucson
Cornish, P. G., Albuquerque
Cornish, P. G., Jr., Albuquerque
Couch, G. B., Phoenix
Cruthirds, A. E., Bisbee, Ariz.
Culpepper, M. B., Carlsbad, N. M.
Cummins, E. J., El Paso

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Davis, S. C., Tucson
Davis, W. J., El Paso
Drane, J. E., Phoenix
Duncan, C. G., Socorro, N. M.
Duncan, E. A., El Paso

Eckles, S. H., Tucson
Egbert, O., El Paso
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Franklin, R. T., Glendale, Ariz.
Frazin, N. D., Silver City, N. M.
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Funk, Z. E., Santa Rosa, N. M.
Gallagher, P., El Paso
Gambrell, J. H., El Paso
Garduno, J. L., Albuquerque
Garrett, F. D., El Paso
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Goodrich, G. E., Phoenix
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Harris, S. T., El Paso
Hart, T. J., Phoenix
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Helm, H. M., Douglas, Ariz.
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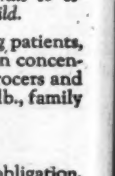

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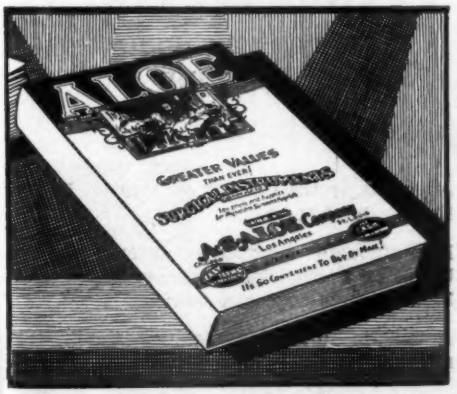

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Shaw, E. B., Las Vegas, N. M.

By Resignation

Branch, W. M., El Paso
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(SAN FRANCISCO—APRIL 4-12)

The Program for the Sixteenth Annual Clinical Session of the American College of Physicians, to meet in San Francisco the week of April 4, 1932, is virtually completed. Mr. E. R. Loveland, the Executive Secretary, with offices at 133 South 36th Street, Philadelphia, will send out copies as soon as the program has been completed and printed, which will be sometime early in February.

We invite all physicians, irrespective of membership in the College, to attend this Session. The program is of such a character that it will interest everyone, whether specialist or general practitioner. The medical talent of the continent has been called upon and the response is very gratifying. When a Fellow of the College has not been the one best prepared to discuss a topic, a guest has been invited and the College has arranged for his presence in San Francisco. The primary purposes of the College are the encouragement and preservation of high standards, the dissemination of knowledge within its field and the cultivation of the historic and esthetic ground in which medicine, as one of the learned professions, grows. This session will reflect the purposes and ideals thus briefly stated and will be the first to be held west of the Mississippi River. For this reason it should have a peculiar interest for readers of SOUTHWESTERN MEDICINE, but the interest only begins here. The Session will be attended by the notables in Medicine from the United States and Canada, and the program, we believe, will be the strongest yet presented.

The General Sessions, attended by all, are held every afternoon, Monday to Friday inclusive, and on Monday and Tuesday evenings as well. More

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GENERAL ASSEMBLIES

Tuesday—
"Gastric and Duodenal Ulcer," Dr. Frank L. Lahey, Boston.
"Sexual Psycho-Neuroses in General Practice," Dr. Joseph Collins, New York.
"The Treatment of Pyelitis," Dr. Herman L. Kretschmer, Chicago.
"Bedside Recognition of Irregularities of the Heart," Dr. Samuel A. Levine," Boston.
"Rentgenological Observations on the Cure of Gastric and Duodenal Ulcers," Dr. Merrill C. Sosman, Boston.

Wednesday—
"Practical Points in the Care and Feeding of Infants," Dr. W. McKim Marriott, St. Louis.
"The Relationship Between Infections of the Upper Respiratory Tract and Pediatric Conditions," Dr. Lee Wallace Dean, St. Louis.
"Referred Symptoms in Gastro-Intestinal Diseases, and Digestive Symptoms in Other Diseases," Dr. Thomas R. Brown, Baltimore.
"Skin Manifestations of Systemic Disease," Dr. Udo J. Wile, Ann Arbor.
"The Diagnosis and Treatment of Cancer of the Colon," Dr. J. Shelton Horsley, Sr., Richmond.

Thursday—
"The Surgery of Trauma," Dr. Wm. O'Neil Sherman, Pittsburg.
"The Treatment of Empyema with Special Reference to the Chronic Type," Dr. Carl A. Hedblom, Chicago.
"The Toxemias of Pregnancy," Dr. Paul Titus, Pittsburg.
"The Relationship of Opthalmology to the General Practice of Medicine," Dr. Wm. L. Benedict, Rochester, Minn.
"Organic Change Versus Disturbance of Function," Dr. Thos. McCrae, Philadelphia.

Friday—
"The Interpretation of Abnormal Uterine Bleeding," Dr. Edw. H. Richardson, Baltimore.
"The Present Status of Vaccine and Non-Specific Protein Therapy," Dr. John A. Kolmer, Philadelphia.
"Neoplasms about the Head and Neck, with Special Reference to the Ear, Nose and Throat," Dr. Joseph C. Beck, Chicago.
"Cancer of the Rectum," Dr. Dudley A. Smith, San Francisco.
"Food Allergy" Dr. Albert H. Rowe, Oakland, Calif.

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than sixty papers and addresses will be presented, revealing the trends and covering the best of the recent work in medicine. The physics and physiology of arteriosclerosis and hypertension will be discussed by the man who has made the greatest recent contribution in this field. The practical phases of the subject will be discussed by two able clinicians. Congenital narrowing of the aorta and pulmonary arteriosclerosis will be presented. The effect of funnel breast on the heart and circulation is studied. Among the subjects of live interest in diseases of the chest are: atelectasis and tuberculosis; the treatment of cavities; some observations on pulmonary emphysema; and the role of bacteria in asthma. Topics on the liver will range from the element of error in the diagnosis of jaundiced patients and a very interesting study of primary carcinoma of the liver in Chinese, to the effect of the administration of glucose and insulin on the glycogen content of normal and pathological livers, and the pathology of the liver in exophthalmic goiter and the Graves' constitution.

The most modern concepts in the diagnosis of Bright's disease, nephritis, and nephrosis are presented. An address on the practical applications of recent discoveries in the field of gastro-intestinal physiology will summarize many years' work of extraordinary value by a master in this field. The clinical aspects of gastric secretions are discussed. The newest experimental and clinical work on the adrenal gland will be presented. Also, the biological and clinical importance of ovary-stimulating substances. There will be studies of calcium metabolism and diseases of the parathyroid gland. The newest knowledge on the nature of epilepsy and its treatment appears.

There are studies on the mechanism of edema formation in disease; on leukopenia; on the action of benzol, Roentgen rays and radium on the blood and blood-forming organs; on the relation of para-nasal sinus infection to disease elsewhere; on the clinical significance of the atrophic tongue; and on the experimental basis for vaccine treatment of chronic arthritis, with a summary of the results of treatment. Diseases peculiar to the Rocky Mountain and Coast countries will be emphasized in this general program.

The outstanding symposium of the Session will bring to clinicians the results of the almost unbelievable advance in our knowledge of the involuntary nervous system. The anatomists, physiologists, and clinicians will collaborate in this extremely important presentation.

The preceding hasty sketch omits many important contributions, being given only to show the modern trend and wide range of the subjects. One evening only will be given to the history of medicine, with delightful studies on the first aphorism of Hippocrates and on Utopia in Medicine.

While Monday morning will be devoted exclusively to registrations, the remaining mornings, from Tuesday to Friday, inclusive, will be given to clinics and demonstrations in institutions in and about San Francisco. Dr. William J. Kerr, Profeossr of Medicine in the University of California Medical School is General Chairman. The committee includes Dr. Arthur L. Bloomfield, Professor of Medicine, Stanford University Medical School, with a group of clinicians representing the various hospitals and laboratories, together with Dr. N. W. Jones of Portland, Oregon, and Dr. F. M. Pottenger of Los Angeles. The work to be exemplified in this part of the program has never been excelled in any meeting of the College. The very wealth and extent of the material precludes mention of any specific item. The fields and borderlands of medicine will be explored. The presentations will be eminently practical. There will be opportunities to study the conditions peculiar to, or of greatest importance in, this part of our country, and in addition a number of the noted clinicians throughout the country will take part. The opportunity to study at first hand the work of the Hooper Foundation for Medicial Research, under the direction of Dr. Carl F. Meyer, would alone make attendance at this meeting worth while, but this is only one item in a program of unusual significance.

On one or two mornings, for those interested in the history of medicine in general, or of the far West and Pacific Coast in particular, interesting exhibits and talks will be presented. The writer of this invitation has never seen more thorough and painstaking preparation for a profitable and delightful clinical session than that made by the San Francisco committee.

The session will be attended by Fellows and Associates of the College from the entire United States and Canada, but it is the desire of the College that the opportunity be given for every physician who desires to attend. The guest fee of $15.00 includes one year's subscription to the Annals of Internal Medicine, the official journal of the College, in which the papers and addresses read during the Session will be published.

A cordial invitation is extended to the readers of SOUTHWESTERN MEDICINE to attend this Session. Provision has been made by the local committee for entertainment of friends and members of the families of Fellows, Associates, and guests at the meeting.

S. MARX WHITE, M. D., President.

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This useful new product is identified by the trade name SMACO product number 201 Liquid Protein Milk and is prepared by the Research Division of S.M.A. Corporation. Many physicians refer to this product as Casein Milk, Eiweiss Milch or Finkelstein formula.

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EXCESSIVE perspiration does not search out its victims by sex. Men just as often suffer from its discomforts as women. This is especially true of hyperidrosis of the axillae, hands and feet.

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THE ROBINSON CLINIC

Brain tumors are more prevalent than the profession realizes. Routine autopsies performed on all patients who die in the City Hospital in Vienna showed that one out of four thousand cases had some type of cranial neoplasm. In other words, in every community of ten thousand people, there are at least two people suffering from a brain tumor.

With this fact in mind, every effort should be made to diagnose and localize these tumors before it is too late, always remembering that few cases are typical until after the optimum operative period has passed.

The classical triad of headache, vomiting and choked disc is seldom found in entirety The presence of one of these conditions with gradually progressing neuro-logical symptoms, is sufficient to warrant the diagnosis of potential tumor, and every step should be taken to determine the presence and location of a tumor mass.

Surgery is the only adequate therapy. X-ray should never be used until after operation, as some types of glioma are activiated by radiation and in all types, oedema is produced, that will invariably aggravate the patient's symptoms and may even cause death.

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WEE MODERNS

By BERTON BRALEY

The babies of these present days are raised upon a system,
You count their calories of food and on a card you list 'em;
They're spanked upon a schedule and petted by the clock
And you mustn't ever jounce 'em and you mustn't ever rock;
Physicians choose their style of dress and fix their hours of sleep
And tell you when they ought to laugh and when they ought to weep;
Their every eccentricity is catalogued and filed
For the modern type of baby is a scientific child!

Time was that mother raised them in a rather casual way,
With a bit of help from grandma—but that isn't done today;
The bringing up of babies is a far from simple art
And you need a dozen volumes and a blueprint and a chart,
A clinical thermometer, a stethoscope, a scale,
Some test tubes, and a dictaphone that registers each wail;
The modern mother's regimen is very far from mild,
For the baby of the present is a scientific chlid!

Oh yes, I am describing the *modern* baby now!

Oh, the old folks sniff about it and the jesters jest a lot
But the modern type of baby is a healthy little tot,
He may be robbed of baby-talk, of many pats and kisses,
But there's a heap of colic and other ills he misses;
And in spite of all the sentiment that in our cosmos lurks,
There isn't any question that the modern method works—
For the scientific baby is a husky little tad.
A CREDIT TO THE DOCTOR, AND THE MOTHER, AND THE DAD!

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With the help of modern scientific equipment, with a fund of co-ordinated medical and surgical knowledge undreamed of even by our grandfathers, *your* doctor can *prevent* diseases that were once supposed to be the natural heritage of mankind. He can *cure* diseases which were once unqualifiedly labeled "fatal".

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See your doctor before he has to see you.

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